

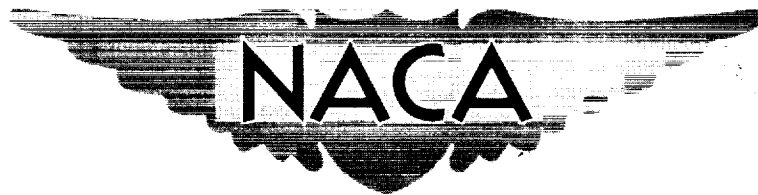
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# RESEARCH MEMORANDUM

PRESSURE DISTRIBUTIONS ON THE BLADE SECTIONS OF  
THE NACA 10-(0)(066)-03 PROPELLER UNDER  
OPERATING CONDITIONS

By Seymour Steinberg and Robert W. Milling

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RESEARCH MEMORANDUM

PRESSURE DISTRIBUTIONS ON THE BLADE SECTIONS OF  
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SUMMARY

This paper is the last of a series of five which present unanalyzed pressure data obtained in tests of five full-scale related propellers incorporating NACA 16-series blade sections. Pressure distributions on the blade sections of these propellers were measured under operating conditions to determine the aerodynamic characteristics of each blade section. The section aerodynamic coefficients obtained by integration of the measured pressure distributions are presented herein, in tabular form, for nine radial stations of the NACA 10-(0)(066)-03 propeller. The thickness ratio varied from about 4 percent at the station nearest the tip to about 16 percent at the innermost section at which pressures were measured. The section helical Mach number varied from 0.35 to 1.14.

INTRODUCTION

The lack of propeller blade-section aerodynamic characteristics at transonic and low supersonic speeds has long been a critical problem entailed in the design of high-speed propellers. Even if two-dimensional airfoil data for this speed range were available, there would remain some doubt as to their applicability, inasmuch as propeller sections operate in a helical flow under conditions far from two dimensional. The present work was undertaken to determine by means of pressure measurements the aerodynamic characteristics of propeller sections under actual operating conditions. Reference 1 presents the results of a preliminary investigation of this type using the NACA 10-(3)(08)-03 propeller. A primary purpose of the early investigation was to determine the feasibility of the method and to develop techniques. The results of the early tests were so encouraging that a more comprehensive program was initiated in which a series of five related propellers were to be investigated. All five propellers had the same blade plan form, pitch distribution, and

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solidity but varied in thickness ratio and design lift coefficient according to the following table:

NACA design number	$c_{ld}$	$h/b$ at 0.7R
10-(3)(066)-03	0.3	0.066
10-(3)(049)-03	.3	.049
10-(3)(090)-03	.3	.090
10-(5)(066)-03	.5	.066
10-(0)(066)-03	0	.066

A complete description of the test apparatus, methods for reduction of data, and the experimental data are presented in reference 2 for the NACA 10-(3)(066)-03 propeller. References 3, 4, and 5 present the data obtained from tests of NACA propellers 10-(3)(049)-03, 10-(3)(090)-03, and 10-(5)(066)-03, respectively.<sup>1</sup>

The present paper presents the pressure data obtained from tests of nine symmetrical sections of the NACA 10-(0)(066)-03 propeller. The thickness ratio varied from about 4 percent at the station nearest the tip to about 16 percent at the innermost section at which pressures were measured. The section helical Mach number varied from 0.35 to 1.14. The data have been analyzed only to the extent necessary to ensure their accuracy and to facilitate their use.

#### SYMBOLS

Many of the symbols used in this paper are defined in figure 1; all are contained in the following list:

B	number of blades
b	blade chord, feet
c	distance from section leading edge to any point on chord, feet
$\bar{c}$	distance from section leading edge to any point about which pitching moments are taken, feet
$c_c$	section chordwise-force coefficient

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<sup>1</sup>The numerical value of solidity in the blade designations for all five propellers is 0.03 and the value presented in references 2 and 3 is incorrect.

$c_d$	section drag coefficient
$c_l$	section lift coefficient
$c_{l_d}$	blade-section design lift coefficient
$c_m$	section pitching-moment coefficient about quarter-chord point
$c_n$	section normal-force coefficient
$D$	propeller diameter, feet
$F_c$	section chordwise-pressure force, pounds
$F_n$	section normal-pressure force, pounds
$G$	Goldstein's induced-velocity correction factor for finite number of blades
$h$	blade-section maximum thickness, feet
$J$	advance ratio ( $V/nD$ )
$M$	Mach number of advance
$M_x$	helical-section Mach number $\left( M \sqrt{1 + \left( \frac{\pi x}{J} \right)^2} \right)$
$m$	section pitching moment, foot-pounds
$N$	propeller rotational speed, rpm
$n$	propeller rotational speed, rps
$P$	pressure coefficient $\left( \frac{p - p_o}{q_x} \right)$
$p$	static pressure at point on airfoil surface, pounds per square foot
$p_o$	free-stream static pressure, pounds per square foot
$q_x$	resultant dynamic pressure at radial station $x$ , pounds per square foot $\left( \frac{1}{2} \rho W_o^2 \right)$

R	propeller tip radius, feet
r	radius to blade element, feet
$r_p$	polar ordinate, feet
s	distance along surface of blade section, feet
V	velocity of advance (corrected for wind-tunnel-wall interference effects), feet per second
$W_o$	velocity vector $\left( V \sqrt{1 + \left( \frac{\pi x}{J} \right)^2} \right)$
W	resultant velocity at blade section, feet per second
$w_1$	induced velocity at blade section, feet per second
x	fraction of propeller tip radius ( $r/R$ )
y	normal distance from chord line to upper or lower surface of airfoil, inches
$\alpha_1$	induced angle of attack, degrees
$\alpha_x$	angle of attack of blade element, corrected for induced flow and blade deflection, at radial station x, degrees $(\beta_x - \phi_o + \Delta\beta - \alpha_1)$
$\alpha_x'$	geometric angle of attack of blade element at radial station x, degrees $(\beta_x - \phi_o)$
$\alpha_{xc}'$	geometric angle of attack of blade element at radial station x corrected for torsional deflection, degrees $(\beta_x + \Delta\beta - \phi_o)$
$\beta$	blade angle, degrees
$\beta_{0.75R}$	blade angle at 0.75 tip radius, degrees
$\beta_x$	blade angle at station x, degrees
$\Delta\beta$	change in blade angle caused by operating loads, degrees
$\theta$	polar angular ordinate, radians
$\rho$	mass density of air in free stream, slugs per cubic foot

$\sigma$	solidity ( $B_D^b/\pi x$ )
$\phi$	helix angle, degrees ( $\phi_0 + \alpha_1$ )
$\phi_0$	geometric helix angle, degrees ( $\tan^{-1}J/\pi x$ )
$\psi$	slope angle at surface of section; referenced to chord, degrees

## Subscripts:

L	lower-surface value
U	upper-surface value

## APPARATUS

This investigation was conducted in the Langley 16-foot high-speed tunnel using the 2000-horsepower propeller dynamometer described in detail in reference 6. The functions and details of the pressure-transfer device and the optical deflectometer used in these tests along with diagrams and photographs of these instruments are presented in reference 2. Figure 2 is a schematic diagram of the pressure-distribution-propeller test installation.

Propeller blades.— Pressure distributions on nine radial stations of the NACA 10-(0)(066)-03 propeller were measured and subsequently reduced to the coefficient form presented in the tables. The numerical designation indicates a 10-foot-diameter propeller having the following design parameters at the 0.7 radius: section design lift coefficient, 0; section thickness ratio, 0.066; and solidity per blade, 0.03. The actual diameter was 10.05 feet. Except for a portion near the tip, the propeller blades incorporated NACA 16-series sections throughout. The blade width and design lift coefficient remain constant at 8 inches and zero, respectively, for all stations except very near the blade tip. In the manufacturing process the blades were faired by hand to a fine edge at the tip; asymmetrical fairing resulted in a slight positive camber at the 0.975 radius. The ordinates of this section have been measured and are tabulated in table 1. Figure 3 presents the propeller blade-form curves, blade plan form, orifice station locations, and the spinner location. Details of the blade construction including the pressure tube and orifice installation and temperature-measuring element are described in reference 2.

## TESTS

For all the tests the blade angle was set nominally at  $45^\circ$  at the three-quarter radius. It was found later that the chord line of the template used for setting the blade angle deviated from that of the section by  $0.2^\circ$ , and that the blades were actually set at  $45.2^\circ$  at the three-quarter radius. Pressure distributions were obtained at the following radial stations:  $x = 0.30, 0.45, 0.60, 0.70, 0.78, 0.85, 0.90, 0.95$ , and  $0.975$ . The techniques and testing procedures used in this investigation are described in detail in reference 2. A schedule of the tests, which also serves as an index to the data tables, is presented in table 2.

## REDUCTION OF DATA

The usual wind-tunnel-wall corrections described in reference 6 have been applied to the tunnel velocity to obtain equivalent free airspeed.

The following equations, repeated with abbreviated explanation from reference 2, have been used in the reduction of the data.

The pressure coefficient

$$P = \frac{P - P_0}{q_x}$$

The normal force

$$F_n = \oint p \cos \psi \, ds = \int_0^b [(P_L - P_0) - (P_U - P_0)] \, dc$$

making the normal-force coefficient

$$c_n = \frac{F_n}{q_x b} = \int_0^{1.0} (P_L - P_U) \, \frac{dc}{b}$$



The chordwise force

$$F_c = \oint p \sin \psi \, ds = \int_0^b \left[ (p_U - p_O) \tan \psi_U - (p_L - p_O) \tan \psi_L \right] dc$$

making the chordwise-force coefficient

$$c_c = \frac{F_c}{q_\infty b} = \int_0^{1.0} (P_U \tan \psi_U - P_L \tan \psi_L) d\frac{c}{b} \quad (1)$$

or

$$c_c = \int_0^{2\pi} P \left[ \frac{\sin \psi}{\sin(\theta - \psi)} \right] \left( \frac{r_p}{b} \right) d\theta \quad (2)$$

where equation (1) is used to evaluate that portion of chordwise-force coefficient from  $\frac{c}{b} = 0.025$  to  $\frac{c}{b} = 1.0$  and equation (2) is used to evaluate the chordwise-force coefficient from  $\frac{c}{b} = 0$  to  $\frac{c}{b} = 0.25$ .

The pitching-moment coefficient

$$c_m = \frac{m}{q_\infty b^2} = \frac{\bar{c}}{b} \int_0^{1.0} (P_L - P_U) d\frac{c}{b} - \int_0^{1.0} (P_L - P_U) \frac{c}{b} d\frac{c}{b}$$

and the moments have been taken about  $\frac{\bar{c}}{b} = 0.25$ .

The induced angle

$$\alpha_i = \tan^{-1} \left( \frac{\sigma c_l}{4G \sin \phi} \right)$$

For the first approximation in the calculation of the induced angle, it is assumed that  $c_l$  is equal to  $c_n$  and  $\phi$  is equal to  $\phi_0$ . Usually two or three successive approximations will yield the final value of induced angle.

## RESULTS AND DISCUSSION

The results obtained from measurement of the pressure distributions on nine radial stations of the NACA 10-(0)(066)-03 propeller are presented in tables 3 to 11 with table 2 serving as an index to the tables.

Pressure distributions.— A value of pressure coefficient is tabulated for each test point for the 12 upper-surface and 12 lower-surface orifice locations as well as for the leading and trailing edges of each airfoil section. The thinness of the blade prevented the installation of a pressure tube at  $\frac{c}{b} = 0.975$  outboard of the 0.7 radial station.

The value of pressure coefficient tabulated for this chordwise position outboard of the 0.7 radius is therefore a faired value and bears the footnote "no orifice." The leading-edge and trailing-edge values, for all stations, also bear the same footnote. The value of leading-edge pressure coefficient recorded is based on the assumption that the stagnation point does not deviate from the leading edge regardless of the section angle of attack. Although this assumption is not strictly true, the error involved is negligible. The trailing-edge pressure coefficient was obtained by reading the faired intersection of the upper- and lower-surface pressures at the trailing edge.

Figure 4 presents typical pressure distributions along the chord of the NACA 16-004.4 blade section ( $x = 0.95$ ) at a constant advance ratio of 2.12 and at an angle of attack of approximately  $1.6^\circ$  (including Goldstein's correction for the induced angle). The values for this figure were obtained from table 10. Figures 4(a) and 4(b) show pressure distributions typical of speeds below the section critical Mach number; whereas figure 4(c) presents a pressure distribution typical of those obtained at low supersonic speeds.

The section normal-force and pitching-moment coefficients were derived by integration of the pressure-distribution plots and are tabulated for all test points in the tables. The chordwise-pressure-force coefficients were obtained by the method described in reference 2. The variations of normal-force, pitching-moment, and chordwise-force coefficients together with section Mach number and angle of attack plotted against advance ratio are shown in figure 5 illustrating a convenient form for use in further analysis of the blade-section data. These values in figure 5 were taken from table 9(e).

Blade-angle deflection.— The torsional deflection of the propeller blade was measured during the tests with an optical deflectometer described in reference 2. These measurements were closely checked by independent computations and the final tabulated values of blade deflection whether determined from measurements or computations are considered to be accurate to within  $0.1^\circ$ .

For the one-blade-propeller data presented in tables 8 and 10 no torsional deflection data were obtained and the values of  $\Delta\beta$  presented were estimated by extrapolation of the two-blade data to lower values of advance ratio.

Induced angle.— The vortex theory with Goldstein's correction for a finite number of blades was used to compute the section induced angle,  $\alpha_1$ . The Goldstein correction factor is strictly applicable only if the propeller operates with a Betz or optimum loading. Since the loadings obtained in these tests are arbitrary, the values of induced angle presented are admittedly in error especially for sections near the blade tip. For a more sound approach a method such as is presented in reference 7 for computation of the induced angles of an arbitrarily loaded propeller should be employed.

Figure 6 shows the effect of the induced-angle correction on the lift-coefficient curve for the NACA 16-005.85 airfoil section at the 0.78 radial station operating at a section helical Mach number of 0.7. The slope  $dc_l/d\alpha$  increased from 0.079 for the uncorrected angle of attack ( $\alpha_{x_c} = \beta_x + \Delta\beta - \phi_0$ ) to 0.125 for the corrected angle

( $\alpha_x = \beta_x + \Delta\beta - \phi_0 - \alpha_1$ ). For comparison, data from the Langley rectangular high-speed tunnel (reference 8) for the NACA 16-006 airfoil section are plotted in the same figure. The induced-angle correction brings the propeller data to closer agreement with the two-dimensional airfoil data, but it is not certain that the data obtained from airfoils operating as propeller blade sections should agree with two-dimensional airfoil data.

Symmetrical airfoil sections normally produce lift coefficients very near zero at an angle of attack of  $0^\circ$  as is indicated in the two-dimensional data from reference 8 shown in figure 6. The angle of zero lift for the propeller blade-section data shown in the same figure is about  $-0.5^\circ$ . An examination of all the blade-section data showed that this phenomenon was evident throughout, and in some cases, the angle of zero lift was as much as  $-1.0^\circ$ . An error found in the blade-angle setting accounted for only  $0.2^\circ$  which was corrected in the data. No other systematic error could be found in either the testing procedure or the data. Until the data from all five propellers tested can be analyzed, no attempt will be made to explain the peculiarity associated with angle of zero lift.

Blade loadings.— Figure 7 shows the variation of normal-force coefficient and section helical Mach number along the blade radius at an advance ratio of 2.2 for five values of free-stream Mach number. These are actual loading curves at the propeller blade itself and not loadings obtained from slipstream surveys. However, wake-survey measurements proved to be of considerable value in fairing these curves. At free-stream Mach numbers of 0.38 and 0.45 all the blade sections operate at subcritical speeds and the load distributions are free from abrupt changes. When the forward Mach number is increased from 0.56 to 0.65, the compressibility effect on the tip sections becomes evident through a loss of lift while the peak loads are continually being shifted inboard.

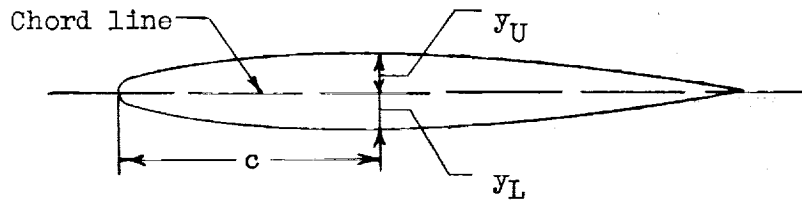
At a stream Mach number of 0.65 the loading curve drops appreciably at the 0.73 blade radius and a slight recovery of lift can be seen to occur at  $x = 0.82$  where the section Mach number is just below unity.

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8. Daley, Bernard N., and Lord, Douglas R.: Aerodynamic Characteristics of Several 6-Percent-Thick Airfoils at Angles of Attack from  $0^{\circ}$  to  $20^{\circ}$  at High Subsonic Speeds. NACA RM L9E19, 1949.

TABLE 1.— ORDINATES FOR BLADE SECTION AT 0.975 RADIUS  
OF NACA 10-(0)(066)-03 PROPELLER



$c$ (in.)	$y_U$ (in.)	$y_L$ (in.)
0	0	0
.2	.038	.032
.4	.063	.053
.8	.094	.072
1.6	.136	.094
2.4	.157	.111
3.2	.169	.115
4.0	.173	.117
4.8	.161	.121
5.6	.151	.111
6.4	.118	.086
7.2	.078	.052
7.6	.047	.025
7.8	.032	.010
8.0	0	0



TABLE 2.- INDEX OF TABLES AND SUMMARY OF TESTS

Table	Radial station, $x$	$\beta_x$ (deg)	Number of blades	Blade section	1140 rpm	1350 rpm	1500 rpm	1600 rpm	M = 0.56	M = 0.58	M = 0.60	M = 0.62	M = 0.65
3	0.30	68.90	2	NACA 16-016.25	a	b	c	d	e	-----	f	-----	g
4	.45	59.50	2	NACA 16-010.00	a	b	c	d	e	-----	f	-----	g
5	.60	51.60	2	NACA 16-007.50	a	b	c	d	e	-----	f	-----	g
6	.70	47.35	2	NACA 16-006.62	a	b	c	d	e	-----	f	-----	g
7	.78	44.15	2	NACA 16-005.85	a	b	c	d	e	-----	f	-----	g
8	.85	41.90	2 1	NACA 16-005.30	a	b	c	d	e	-----	f	-----	g
9	.90	40.00	2	NACA 16-004.80	a	b	c	d	e	-----	f	-----	g
10	.95	38.85	2 1	NACA 16-004.40	a	b	c	d	e	j	k	l	-----
11	.975	38.50	2	NACA 16-003.72	a	b	c	d	e	-----	f	-----	g

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TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-016.25 PROPELLER BLADE SECTION ( $x = 0.30$ ) $\theta_0.75R = 45.2^\circ$ ,  $\beta_x = 68.90^\circ$ ,  $B = 2$ (a)  $N = 1140$  rpm.

J M <sub>x</sub> α <sub>1</sub> Δδ α <sub>1</sub> c <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P													
	1.782	1.878	1.969	2.047	2.158	2.264	2.453	2.561	2.304	2.208	2.118	2.003	1.903	1.827
a <sub>0.000</sub>	1.031	1.034	1.037	1.040	1.043	1.047	1.054	1.051	1.048	1.045	1.042	1.038	1.034	1.033
a <sub>0.025</sub>	-1.676	-1.335	-1.049	-0.836	-0.572	-0.362	-0.061	-0.196	-0.285	-0.475	-0.663	-0.953	-1.254	-1.508
a <sub>0.050</sub>	-1.420	-1.195	-0.994	-0.894	-0.668	-0.516	-0.287	-0.394	-0.458	-0.597	-0.734	-0.938	-1.137	-1.305
a <sub>0.100</sub>	-1.046	-0.925	-0.795	-0.713	-0.593	-0.490	-0.340	-0.415	-0.452	-0.548	-0.632	-0.765	-0.884	-0.979
a <sub>0.200</sub>	-0.776	-0.696	-0.611	-0.575	-0.507	-0.442	-0.351	-0.397	-0.418	-0.475	-0.529	-0.599	-0.668	-0.733
a <sub>0.300</sub>	-0.667	-0.616	-0.553	-0.527	-0.490	-0.442	-0.380	-0.412	-0.424	-0.468	-0.501	-0.553	-0.594	-0.636
a <sub>0.400</sub>	-0.585	-0.552	-0.506	-0.497	-0.473	-0.439	-0.402	-0.426	-0.431	-0.458	-0.476	-0.510	-0.535	-0.565
a <sub>0.500</sub>	-0.521	-0.502	-0.471	-0.471	-0.459	-0.439	-0.422	-0.435	-0.436	-0.451	-0.455	-0.479	-0.490	-0.508
a <sub>0.600</sub>	-0.416	-0.413	-0.392	-0.404	-0.404	-0.397	-0.399	-0.403	-0.396	-0.405	-0.398	-0.402	-0.399	-0.407
a <sub>0.700</sub>	-0.279	-0.294	-0.287	-0.311	-0.329	-0.333	-0.354	-0.346	-0.337	-0.335	-0.320	-0.306	-0.282	-0.284
a <sub>0.800</sub>	-0.050	-0.066	-0.076	-0.110	-0.158	-0.161	-0.196	-0.178	-0.166	-0.163	-0.144	-0.094	-0.062	-0.055
a <sub>0.900</sub>	0.114	0.137	0.159	0.161	0.151	0.162	0.151	0.164	0.166	0.149	0.161	0.156	0.145	0.126
a <sub>0.950</sub>	0.123	0.145	0.182	0.210	0.250	0.238	0.232	0.232	0.234	0.246	0.242	0.187	0.162	0.139
a <sub>0.975</sub>	0.671	0.552	0.448	0.344	0.209	0.085	-0.140	-0.043	0.029	0.153	0.263	0.395	0.531	0.619
a <sub>1.000</sub>	0.388	0.281	0.198	0.102	0.014	-0.103	-0.281	-0.211	-0.151	-0.053	0.037	0.145	0.266	0.346
a <sub>1.050</sub>	0.178	0.091	0.030	-0.047	-0.127	-0.193	-0.312	-0.268	-0.226	-0.153	-0.091	-0.017	0.079	0.139
a <sub>1.100</sub>	-0.005	-0.074	-0.115	-0.181	-0.243	-0.289	-0.380	-0.352	-0.316	-0.262	-0.214	-0.156	-0.079	-0.033
a <sub>1.150</sub>	-0.096	-0.151	-0.185	-0.237	-0.281	-0.318	-0.380	-0.364	-0.334	-0.299	-0.257	-0.217	-0.154	-0.116
a <sub>1.200</sub>	-0.178	-0.222	-0.248	-0.289	-0.322	-0.349	-0.397	-0.385	-0.362	-0.332	-0.306	-0.275	-0.220	-0.196
a <sub>1.250</sub>	-0.242	-0.286	-0.295	-0.333	-0.360	-0.365	-0.399	-0.397	-0.381	-0.358	-0.342	-0.325	-0.282	-0.262
a <sub>1.300</sub>	-0.306	-0.337	-0.342	-0.371	-0.380	-0.385	-0.394	-0.403	-0.390	-0.375	-0.370	-0.364	-0.336	-0.319
a <sub>1.350</sub>	-0.342	-0.354	-0.349	-0.367	-0.360	-0.353	-0.351	-0.364	-0.356	-0.352	-0.356	-0.368	-0.349	-0.341
a <sub>1.400</sub>	-0.288	-0.290	-0.279	-0.292	-0.281	-0.238	-0.177	-0.214	-0.226	-0.256	-0.281	-0.294	-0.282	-0.284
a <sub>1.450</sub>	-0.142	-0.108	-0.080	-0.069	-0.031	-0.001	0.029	0.002	0.001	-0.007	-0.041	-0.082	-0.091	-0.121
a <sub>1.500</sub>	-0.032	-0.007	-0.026	-0.057	0.130	0.152	0.159	0.140	0.141	0.153	0.111	0.033	0.004	-0.015
a <sub>1.550</sub>	0.120	0.140	0.174	0.200	0.245	0.265	0.255	0.255	0.264	0.280	0.263	0.149	0.154	0.146

No orifice.

NACA



TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-016.25 PROPELLER BLADE SECTION ( $x = 0.30$ ) $\theta_0.75R = 45.2^\circ$ ,  $\theta_x = 68.90^\circ$ ,  $B = 2$  - Continued(b)  $N = 1350$  rpm.

J $M_x$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_m$ $c_o$	Pressure coefficient, P														1.910 .439 5.16 .02 .75 .3161 .0705
	1.048 -1.472 -1.311 -1.000 -1.754 -1.663 -1.594 -1.531 -1.433 -1.298 -1.065 -1.115 -1.24	1.052 -1.156 -1.105 -1.084 -1.072 -1.061 -1.055 -1.049 -1.043 -1.037 -1.031 -1.025 -1.019	1.055 -1.055 -1.050 -1.045 -1.040 -1.035 -1.030 -1.025 -1.020 -1.015 -1.010 -1.005 -1.000	1.058 -1.058 -1.053 -1.048 -1.043 -1.038 -1.033 -1.028 -1.023 -1.018 -1.013 -1.008 -1.003	1.061 -1.061 -1.056 -1.051 -1.046 -1.041 -1.036 -1.031 -1.026 -1.021 -1.016 -1.011 -1.006	1.064 -1.064 -1.059 -1.054 -1.049 -1.044 -1.039 -1.034 -1.029 -1.024 -1.019 -1.014 -1.009	1.067 -1.067 -1.062 -1.057 -1.052 -1.047 -1.042 -1.037 -1.032 -1.027 -1.022 -1.017 -1.012 -1.007	1.070 -1.070 -1.065 -1.060 -1.055 -1.050 -1.045 -1.040 -1.035 -1.030 -1.025 -1.020 -1.015 -1.010 -1.005	1.073 -1.073 -1.068 -1.063 -1.058 -1.053 -1.048 -1.043 -1.038 -1.033 -1.028 -1.023 -1.018 -1.013 -1.008	1.076 -1.076 -1.071 -1.066 -1.061 -1.056 -1.051 -1.046 -1.041 -1.036 -1.031 -1.026 -1.021 -1.016	1.079 -1.079 -1.074 -1.069 -1.064 -1.059 -1.054 -1.049 -1.044 -1.039 -1.034 -1.029 -1.024 -1.019	1.082 -1.082 -1.077 -1.072 -1.067 -1.062 -1.057 -1.052 -1.047 -1.042 -1.037 -1.032 -1.027 -1.022	1.085 -1.085 -1.080 -1.075 -1.070 -1.065 -1.060 -1.055 -1.050 -1.045 -1.040 -1.035 -1.030 -1.025	1.088 -1.088 -1.083 -1.078 -1.073 -1.068 -1.063 -1.058 -1.053 -1.048 -1.043 -1.038 -1.033 -1.028 -1.023	1.091 -1.091 -1.086 -1.081 -1.076 -1.071 -1.066 -1.061 -1.056 -1.051 -1.046 -1.041 -1.036 -1.031 -1.026
Upper surface															
Lower surface															
$a_0.000$	1.048	1.052	1.055	1.061	1.065	1.070	1.073	1.076	1.079	1.082	1.085	1.088	1.091	1.094	1.097
$a_0.025$	-1.472	-1.156	-1.055	-1.061	-1.065	-1.070	-1.073	-1.076	-1.079	-1.082	-1.085	-1.088	-1.091	-1.094	-1.097
$a_0.050$	-1.311	-1.105	-1.043	-1.063	-1.065	-1.070	-1.073	-1.076	-1.079	-1.082	-1.085	-1.088	-1.091	-1.094	-1.097
$a_0.100$	-1.000	-1.084	-1.050	-1.070	-1.072	-1.075	-1.078	-1.081	-1.084	-1.087	-1.090	-1.093	-1.096	-1.099	-1.102
$a_0.200$	-1.754	-1.672	-1.603	-1.535	-1.483	-1.419	-1.375	-1.330	-1.285	-1.240	-1.195	-1.150	-1.105	-1.060	-1.015
$a_0.300$	-1.663	-1.611	-1.559	-1.515	-1.481	-1.450	-1.424	-1.401	-1.379	-1.357	-1.335	-1.313	-1.291	-1.269	-1.247
$a_0.400$	-1.594	-1.555	-1.523	-1.494	-1.481	-1.457	-1.438	-1.423	-1.408	-1.393	-1.378	-1.363	-1.348	-1.333	-1.318
$a_0.500$	-1.531	-1.508	-1.493	-1.477	-1.473	-1.457	-1.457	-1.457	-1.457	-1.457	-1.457	-1.457	-1.457	-1.457	-1.457
$a_0.600$	-1.433	-1.423	-1.419	-1.421	-1.428	-1.423	-1.429	-1.436	-1.441	-1.446	-1.451	-1.456	-1.461	-1.466	-1.471
$a_0.700$	-1.298	-1.302	-1.315	-1.340	-1.355	-1.360	-1.374	-1.383	-1.391	-1.401	-1.408	-1.418	-1.425	-1.435	-1.442
$a_0.800$	-1.065	-1.070	-1.095	-1.157	-1.172	-1.176	-1.191	-1.205	-1.217	-1.223	-1.231	-1.239	-1.247	-1.254	-1.261
$a_0.900$	-1.115	-1.142	-1.160	-1.142	-1.136	-1.166	-1.165	-1.158	-1.151	-1.142	-1.134	-1.125	-1.116	-1.107	-1.098
$a_0.950$	-1.124	-1.153	-1.190	-1.223	-1.208	-1.222	-1.219	-1.217	-1.211	-1.203	-1.194	-1.185	-1.176	-1.167	-1.158
$a_1.000$	-1.095	-1.125	-1.160	-1.223	-1.242	-1.225	-1.216	-1.211	-1.204	-1.196	-1.187	-1.178	-1.169	-1.160	-1.151
$a_1.000$	-1.095	-1.125	-1.160	-1.223	-1.242	-1.225	-1.216	-1.211	-1.204	-1.196	-1.187	-1.178	-1.169	-1.160	-1.151

$a_0$  No orifice.  
 $b$  Paired value.

TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-016.25 PROPELLER BLADE SECTION ( $\alpha = 0.30$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 68.90^\circ$ ,  $B = 2$  - Continued(c)  $N = 1500$  rpm.

J $M_x$ $\alpha_1$ $\Delta\delta$ $c_l$ $c_m$ $c_d$	Pressure coefficient, P											
	c/b											
0.000	1.824	1.936	2.029	2.114	2.224	2.328	2.443	2.389	2.273	2.176	2.087	1.999
0.025	.472	.493	.514	.532	.556	.578	.606	.593	.565	.545	.524	.506
0.050	6.22	4.86	3.81	2.93	1.87	.94	0	.43	1.42	2.32	3.20	4.14
0.100	.02	.02	.02	.01	.01	0	0	0	.01	.01	.02	.02
0.200	1.00	.76	.55	.42	.34	.23	.08	.13	.30	.37	.46	.61
0.300	.4155	.3206	.2361	.1813	.1458	.1016	.0342	.0558	.1290	.1600	.1968	.2613
0.400	.0759	.0711	.0655	.0531	.0274	.0063	-.0014	.0075	.0173	.0375	.0585	.0729
0.500	1.057	1.062	1.068	1.072	1.079	1.086	1.095	1.091	1.082	1.076	1.070	1.065
0.600	-1.673	-1.285	-.979	-.735	-.471	-.256	-.060	-.154	-.372	-.576	-.813	-1.076
0.700	-1.461	-1.205	-1.000	-.825	-.637	-.473	-.319	-.392	-.564	-.716	-.885	-1.069
0.800	-1.083	-.953	-.823	-.717	-.594	-.487	-.387	-.433	-.550	-.648	-.749	-.865
0.900	-.814	-.718	-.643	-.596	-.526	-.464	-.407	-.431	-.502	-.561	-.610	-.667
1.000	-.698	-.636	-.587	-.549	-.516	-.477	-.449	-.474	-.502	-.537	-.560	-.607
1.100	-.621	-.581	-.550	-.527	-.508	-.487	-.476	-.477	-.502	-.535	-.561	-.591
1.200	-.543	-.518	-.507	-.498	-.498	-.491	-.497	-.487	-.500	-.503	-.499	-.513
1.300	-.431	-.423	-.419	-.426	-.444	-.458	-.477	-.459	-.456	-.442	-.424	-.423
1.400	-.282	-.286	-.302	-.324	-.360	-.392	-.427	-.401	-.382	-.354	-.316	-.298
1.500	-.046	-.046	-.068	-.112	-.185	-.227	-.265	-.230	-.209	-.165	-.093	-.061
1.600	.093	.131	.151	.158	.111	.051	.034	.061	.075	.128	.160	.142
1.700	.098	.139	.170	.204	.208	.172	.190	.200	.185	.207	.192	.156
1.800	.0375	.513	.408	.304	.169	.041	-.116	-.033	.105	.216	.339	.446
1.900	.075	.254	.151	.058	-.053	-.159	-.290	-.221	-.109	-.016	.086	.183
2.000	.150	.071	-.012	-.083	-.167	-.259	-.333	-.284	-.207	-.142	-.059	.011
2.100	.250	-.096	-.162	-.218	-.282	-.342	-.416	-.375	-.314	-.265	-.201	-.143
2.200	.350	-.171	-.225	-.269	-.317	-.362	-.420	-.388	-.342	-.305	-.253	-.210
2.300	.450	-.246	-.293	-.328	-.364	-.398	-.441	-.416	-.382	-.357	-.316	-.279
2.400	.550	-.303	-.337	-.361	-.382	-.406	-.441	-.420	-.398	-.372	-.334	-.293
2.500	.650	-.347	-.386	-.399	-.403	-.412	-.436	-.424	-.412	-.410	-.395	-.382
2.600	.750	-.381	-.391	-.390	-.366	-.352	-.369	-.366	-.364	-.382	-.391	-.389
2.700	.850	-.316	-.304	-.273	-.266	-.254	-.257	-.257	-.257	-.257	-.257	-.257
2.800	.925	-.157	-.099	-.041	-.076	-.151	-.141	-.149	-.175	-.204	-.231	-.257
2.900	.975	-.056	-.039	-.122	.076	.228	.257	.286	.250	.177	.088	.013
3.000	.070	.122	.160	.240	.253	.254	.308	.286	.250	.185	.130	.075

No orifice.

Paired value.

NACA

TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-016.25 PROPELLER BLADE SECTION ( $\alpha = 0.30$ ) $\theta_0.75R = 45.2^\circ$ ,  $\beta x = 68.90^\circ$ ,  $B = 2$  - Continued(d)  $N = 1600$  rpm.

J Mx $c_{x1}$ $c_{x2}$ $c_{y1}$ $c_{y2}$ $c_{y3}$	Pressure coefficient, P											
	c/h											
0.000	2.021	2.111	2.197	2.306	2.392	2.452	2.426	2.354	2.260	2.153	2.066	
0.025	.552	.570	.591	.615	.637	.651	.645	.624	.602	.577	.555	
0.050	3.90	2.96	2.12	1.13	.40	-.10	.13	.72	1.54	2.54	3.42	
0.100	.03	.02	.02	.01	0	0	0	0	.01	.02	.03	
0.200	.67	.47	.39	.27	.15	.09	.13	.18	.32	.40	.52	
0.300	.266	.2039	.1690	.1200	.0652	.0406	.0552	.0784	.1387	.1735	.2226	
0.400	.0657	.0529	.0323	.0144	.0093	-.0119	-.0039	.0170	.0224	.0454	.0615	
0.500												
0.600												
0.700												
0.800												
0.900												
0.950												
Upper surface												
0.000	1.078	1.083	1.090	1.097	1.105	1.110	1.108	1.100	1.093	1.086	1.079	
0.025	-1.038	-.771	-.543	-.304	-.129	-.028	-.066	-.208	-.397	-.642	-.906	
0.050	-1.065	-.878	-.712	-.529	-.385	-.238	-.336	-.449	-.597	-.782	-.972	
0.100	-.875	-.757	-.658	-.538	-.442	-.388	-.431	-.484	-.581	-.699	-.813	
0.200	-.677	-.627	-.573	-.504	-.447	-.418	-.474	-.494	-.526	-.594	-.650	
0.300	-.620	-.581	-.558	-.517	-.481	-.467	-.500	-.506	-.524	-.563	-.594	
0.400	-.576	-.554	-.543	-.518	-.499	-.496	-.524	-.521	-.521	-.541	-.561	
0.500	-.526	-.520	-.525	-.518	-.514	-.524	-.522	-.513	-.515	-.516	-.520	
0.600	-.434	-.481	-.461	-.476	-.484	-.501	-.497	-.475	-.464	-.444	-.434	
0.700	-.305	-.330	-.367	-.399	-.419	-.449	-.441	-.403	-.377	-.345	-.310	
0.800	-.065	-.105	-.175	-.219	-.236	-.285	-.270	-.215	-.198	-.135	-.073	
0.900	.142	.160	.123	.071	.070	.011	.023	.086	.094	.147	.150	
0.950	.157	.191	.206	.182	.209	.157	.168	.203	.196	.207	.167	
Lower surface												
0.0375	.508	.320	.208	.076	-.037	-.120	-.092	.012	.134	.260	.377	
0.075	.169	.073	-.025	-.135	-.231	-.305	-.281	-.189	-.085	.121	.211	
0.150	0	-.075	-.151	-.230	-.296	-.349	-.334	-.269	-.193	.115	.208	
0.250	-.155	-.216	-.275	-.339	-.393	-.439	-.425	-.368	-.307	.246	.335	
0.350	-.221	-.271	-.318	-.367	-.409	-.446	-.436	-.391	-.340	.294	.351	
0.450	-.290	-.330	-.367	-.406	-.437	-.467	-.461	-.424	-.384	.351	.384	
0.550	-.340	-.370	-.397	-.422	-.444	-.462	-.459	-.436	-.404	.384	.355	
0.650	-.391	-.409	-.423	-.432	-.445	-.452	-.454	-.422	-.399	.417	.401	
0.750	-.399	-.402	-.389	-.376	-.380	-.360	-.374	-.389	-.379	.399	.403	
0.850	-.301	-.273	-.220	-.163	-.152	-.093	-.118	-.177	-.183	.255	.302	
0.925	-.107	-.054	-.048	-.122	-.122	.158	.152	.095	.103	.007	.093	
0.975	.044	.120	.193	.210	.231	.233	.234	.212	.207	.064	.161	
1.000	.150	.208	.260	.239	.276	.263	.260	.255	.244	.246	.181	

<sup>a</sup>No orifice.  
<sup>b</sup>Paired value.

NACA

TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

MACA 16-016.25 PROPELLER BLADE SECTION ( $\alpha = 0.30$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 68.90^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.56$ .

Pressure coefficient, P																			
	J	M <sub>x</sub>	α <sub>x</sub> <sup>1</sup>	Δθ	α <sub>1</sub>	α <sub>n</sub>	α <sub>m</sub>	α <sub>c</sub>	2.146	2.170	2.204	2.228	2.255	2.282	2.311	2.341	2.377	2.409	2.439
Upper surface	0.000	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.025	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.050	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.100	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.200	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.300	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.400	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.500	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.600	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
	0.700	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
0.800	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094	
0.900	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094	
0.950	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
0.975	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
1.000	1.097	1.098	1.097	1.097	1.096	1.096	1.096	1.096	1.097	1.096	1.096	1.095	1.095	1.095	1.095	1.094	1.094	1.094	1.094
Lower surface	0.0375	1.353	1.296	1.269	1.241	1.207	1.175	1.140	1.096	1.055	1.016	0.974	0.936	0.896	0.855	0.816	0.774	0.736	0.694
	0.075	1.091	1.046	1.023	1.006	0.986	0.963	0.938	0.912	0.885	0.857	0.828	0.800	0.771	0.742	0.713	0.684	0.655	0.626
	0.150	1.061	1.095	1.115	1.130	1.150	1.169	1.190	1.216	1.242	1.262	1.288	1.310	1.333	1.356	1.378	1.400	1.422	1.444
	0.250	1.208	1.234	1.250	1.260	1.276	1.291	1.306	1.328	1.346	1.360	1.378	1.394	1.409	1.423	1.439	1.451	1.466	1.473
	0.350	1.264	1.285	1.298	1.307	1.317	1.328	1.340	1.355	1.371	1.378	1.394	1.409	1.423	1.439	1.451	1.466	1.473	1.473
	0.450	1.330	1.348	1.360	1.364	1.369	1.378	1.383	1.398	1.405	1.412	1.422	1.431	1.442	1.451	1.466	1.473	1.473	1.473
	0.550	1.372	1.384	1.394	1.394	1.397	1.401	1.405	1.412	1.422	1.431	1.442	1.451	1.466	1.473	1.473	1.473	1.473	1.473
	0.650	1.421	1.424	1.431	1.428	1.424	1.424	1.421	1.426	1.431	1.431	1.431	1.431	1.431	1.431	1.431	1.431	1.431	1.431
	0.750	1.416	1.412	1.414	1.409	1.390	1.387	1.378	1.376	1.370	1.367	1.367	1.367	1.367	1.367	1.367	1.367	1.367	1.367
	0.850	1.289	1.266	1.261	1.239	1.216	1.200	1.183	1.171	1.162	1.151	1.148	1.143	1.132	1.122	1.116	1.110	1.104	1.098
0.925	1.061	1.021	1.007	1.025	1.059	1.082	1.102	1.114	1.117	1.122	1.122	1.122	1.122	1.122	1.122	1.122	1.122	1.122	
0.975	1.111	1.150	1.158	1.182	1.198	1.204	1.208	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	1.209	
1.000	1.206	1.223	1.229	1.240	1.263	1.268	1.268	1.268	1.268	1.268	1.268	1.268	1.268	1.268	1.268	1.268	1.268	1.268	

No orifice.

NACA

TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-016.25 PROPELLER BLADE SECTION ( $x = 0.30$ ) $\theta_0.75R = 45.2^\circ$ ,  $\theta_x = 68.90^\circ$ ,  $B = 2$  - Continued(f)  $M = 0.60$ .

J $M_\infty$ $\alpha$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_c$	Pressure coefficient, p													
	c/b													
Upper surface	2.440	2.416	2.391	2.363	2.335	2.307	2.287	2.247	2.222	2.196	2.172	2.152	2.129	2.106
	.646	.647	.648	.649	.649	.650	.654	.653	.654	.653	.655	.656	.657	.658
	.02	.21	.41	.64	.88	1.12	1.30	1.65	1.89	2.13	2.36	2.55	2.78	3.01
	0	0	0	0	.01	.24	.27	.31	.34	.37	.41	.42	.46	.48
	.14	.17	.20	.21	.23	.24	.27	.31	.34	.37	.41	.42	.46	.48
	.0600	.0752	.0884	.0932	.1013	.1055	.1190	.1352	.1455	.1619	.1781	.1813	.1961	.2071
	-.0207	-.0168	-.0118	-.0036	.0043	.0138	.0175	.0240	.0323	.0392	.0451	.0503	.0556	.0618
Lower surface	1.108	1.109	1.109	1.110	1.110	1.110	1.111	1.111	1.111	1.111	1.111	1.112	1.112	1.113
	-.035	-.078	-.117	-.158	-.204	-.244	-.227	-.357	-.422	-.490	-.549	-.604	-.663	-.719
	-.240	-.346	-.481	-.620	-.760	-.895	-.539	-.596	-.655	-.717	-.769	-.823	-.881	-.941
	-.386	-.418	-.445	-.472	-.499	-.527	-.555	-.595	-.639	-.683	-.721	-.757	-.798	-.838
	-.415	-.439	-.457	-.474	-.490	-.508	-.523	-.548	-.576	-.603	-.626	-.652	-.675	-.696
	-.461	-.480	-.491	-.503	-.514	-.526	-.536	-.551	-.569	-.588	-.602	-.620	-.632	-.645
	-.491	-.505	-.512	-.521	-.525	-.534	-.537	-.548	-.560	-.572	-.579	-.589	-.599	-.604
	-.517	-.528	-.532	-.532	-.532	-.536	-.536	-.540	-.543	-.549	-.550	-.557	-.557	-.559
	-.597	-.505	-.502	-.498	-.493	-.490	-.483	-.480	-.476	-.475	-.471	-.470	-.468	-.463
	-.648	-.551	-.544	-.533	-.520	-.509	-.493	-.483	-.475	-.467	-.457	-.450	-.439	-.426

<sup>a</sup>No orifice.  
<sup>b</sup>Paired value.

NACA

TABLE 3.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-016.25 PROPELLER BLADE SECTION ( $\alpha = 0.30$ ) $\beta_0, 75^\circ = 45.2^\circ, \beta_x = 68.90^\circ, B = 2$  - Concluded $(\alpha) M = 0.65.$ 

J $M_\infty$ $\alpha_x$ $\Delta\delta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P											
	c/b											
	2.130	2.160	2.188	2.218	2.246	2.266	2.291	2.321	2.341	2.368	2.401	2.430
	.707	.708	.708	.709	.710	.704	.705	.704	.703	.699	.701	.700
	2.77	2.47	2.20	1.92	1.66	1.48	1.26	1.00	.83	.62	.33	.10
	.02	.02	.02	.02	.02	.02	.01	.01	.01	.01	0	0
	.18	.45	.42	.41	.38	.36	.34	.31	.29	.25	.20	.17
	.2084	.1955	.1813	.1774	.1642	.1568	.1500	.1352	.1252	.1113	.0900	.0735
	.0551	.0477	.0364	.0308	.0234	.0162	.0113	.0034	-.0017	-.0096	-.0107	-.0192
	Upper surface											
	1.131	1.132	1.132	1.132	1.133	1.130	1.131	1.131	1.131	1.129	1.130	1.129
	-.576	-.503	-.446	-.395	-.336	-.295	-.265	-.202	-.172	-.118	-.073	-.020
	-.894	-.806	-.744	-.690	-.627	-.586	-.554	-.491	-.458	-.410	-.366	-.314
	-.877	-.809	-.754	-.707	-.658	-.625	-.597	-.545	-.520	-.501	-.476	-.449
	-.757	-.716	-.682	-.651	-.617	-.597	-.577	-.538	-.524	-.501	-.476	-.449
	-.728	-.702	-.676	-.652	-.626	-.612	-.596	-.566	-.558	-.543	-.497	-.502
	-.676	-.663	-.648	-.633	-.619	-.613	-.599	-.576	-.572	-.566	-.550	-.537
	-.621	-.618	-.614	-.607	-.600	-.603	-.595	-.580	-.578	-.581	-.571	-.562
	-.503	-.508	-.514	-.515	-.517	-.531	-.529	-.523	-.528	-.537	-.533	-.531
	-.360	-.372	-.388	-.391	-.399	-.420	-.423	-.427	-.438	-.459	-.461	-.468
	-.117	-.138	-.169	-.178	-.194	-.223	-.231	-.241	-.258	-.279	-.285	-.299
	-.127	-.129	-.115	-.109	-.100	-.072	-.061	-.054	-.023	-.004	-.014	-.029
	-.167	-.184	-.183	-.187	-.187	-.174	-.170	-.166	-.146	-.128	-.117	-.109
	Lower surface											
	.290	.253	.222	.196	.163	.123	.107	.073	.042	-.006	-.039	-.082
	.030	-.003	-.031	-.054	-.081	-.117	-.130	-.157	-.184	-.226	-.252	-.287
	-.119	-.143	-.163	-.177	-.198	-.225	-.231	-.248	-.269	-.301	-.317	-.345
	-.275	-.296	-.312	-.321	-.337	-.359	-.364	-.375	-.390	-.417	-.430	-.449
	-.350	-.352	-.362	-.370	-.380	-.398	-.400	-.406	-.417	-.440	-.446	-.461
	-.450	-.419	-.424	-.428	-.435	-.448	-.448	-.448	-.455	-.475	-.477	-.486
	-.454	-.459	-.461	-.460	-.461	-.471	-.468	-.462	-.467	-.479	-.478	-.483
	-.509	-.507	-.500	-.493	-.487	-.490	-.481	-.471	-.471	-.476	-.470	-.468
	-.489	-.475	-.453	-.440	-.424	-.417	-.403	-.384	-.378	-.372	-.360	-.348
	-.297	-.267	-.222	-.198	-.165	-.146	-.124	-.094	-.079	-.060	-.042	-.022
	-.032	.010	.064	.089	.113	.126	.141	.157	.163	.170	.172	.176
	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975	.975
	.215	.218	.210	.212	.208	.195	.196	.216	.202	.191	.190	.190

No orifice.

NACA

TABLE 4.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-010.00 PROPELLER BLADE SECTION ( $\alpha = 0.45^\circ$ )

$\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 59.50^\circ$ ,  $B = 2$

(a)  $N = 1140$  rpm.

J $M_x$ $c_{x'}$ $\Delta S$ $c_l$ $c_n$ $c_m$ $c_c$	Pressure coefficient, p									
	c/b									
0.000	1.801	1.930	2.066	2.187	2.299	2.446	2.376	2.265	2.135	2.010
0.025	.399	.420	.439	.457	.473	.499	.485	.469	.448	.429
0.050	7.85	5.72	3.88	2.38	1.09	-.47	.25	1.47	3.01	4.62
0.100	.12	.12	.10	.07	.05	.01	.03	.06	.08	.11
0.200	1.46	1.10	.78	.52	.32	.05	.19	.37	.63	.92
0.300	.5961	.4529	.3226	.2174	.1332	.0232	.0790	.1568	.2613	.3767
0.400	.0285	.0206	.0182	.0098	.0010	-.0075	-.0041	.0041	.0134	.0190
0.500										
0.600										
0.700										
0.800										
0.900										
0.950										
0.975										
0.990										
1.000										
1.041	1.041	1.045	1.050	1.054	1.057	1.064	1.060	1.056	1.051	1.047
1.039	-.1.344	-.1.344	-.1.001	-.585	-.276	.035	-.114	-.366	-.744	-.1.213
1.434	-.1.031	-.739	-.526	-.477	-.270	-.054	-.160	-.334	-.573	-.826
.991	-.739	-.526	-.398	-.371	-.238	-.091	-.162	-.279	-.432	-.611
.677	-.526	-.416	-.324	-.297	-.217	-.121	-.168	-.243	-.332	-.449
.428	-.416	-.353	-.287	-.245	-.195	-.126	-.160	-.213	-.276	-.337
.367	-.353	-.316	-.269	-.231	-.195	-.145	-.170	-.208	-.255	-.313
.295	-.316	-.263	-.229	-.208	-.171	-.126	-.188	-.213	-.244	-.288
.205	-.263	-.190	-.174	-.165	-.137	-.106	-.183	-.202	-.214	-.243
.053	-.190	-.154	-.148	-.125	-.098	-.066	-.165	-.170	-.170	-.180
.149	-.154	-.125	-.106	-.099	-.078	-.059	-.090	-.074	-.055	-.050
.221	-.125	-.099	-.087	-.077	-.063	-.043	-.136	-.139	-.162	-.165
.851	.717	.543	.372	.372	.198	-.017	.095	.252	.448	.622
.625	.501	.356	.218	.218	.083	-.081	.002	.120	.274	.419
.415	.318	.206	.109	.109	.011	-.101	-.044	.038	.151	.254
.260	.185	.102	.026	.026	-.046	-.126	-.085	-.025	.057	.137
.174	.116	.050	.004	.011	-.064	-.123	-.090	-.049	.018	.077
.102	.056	.004	.004	-.039	-.083	-.131	-.103	-.071	-.023	.023
.033	-.004	-.045	-.045	-.079	-.107	-.143	-.124	-.101	-.061	.028
.650	-.037	-.067	-.067	-.085	-.107	-.131	-.116	-.101	-.073	-.073
.750	-.051	-.067	-.067	-.077	-.083	-.094	-.085	-.082	-.073	-.060
.850	-.001	-.009	-.009	-.011	-.013	.043	.033	0	-.008	-.003
.925	.062	.145	.145	.161	.182	.201	.192	.175	.157	.140
.975	.170	.205	.227	.261	.308	.342	.329	.293	.248	.219
1.000	.300	.340	.322	.330	.373	.410	.405	.350	.326	.310

<sup>a</sup>No orifice.

NACA





TABLE 4.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-010.00 PROPELLER BLADE SECTION ( $x = 0.45$ ) $P_0, 75R = 45.2^\circ, \beta_x = 59.50^\circ, B = 2$  - Continued(c)  $N = 1500$  rpm.

J $M_x$ $\alpha_x$ $\Delta\beta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P													
	Upper surface							Lower surface						
0.000	1.111	1.104	1.099	1.092	1.088	1.082	1.078	1.075	1.076	1.086	1.090	1.095	1.101	1.107
0.025	1.150	1.081	1.030	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
0.050	1.020	1.054	1.083	1.099	1.104	1.108	1.112	1.116	1.120	1.124	1.128	1.132	1.136	1.140
0.100	0.046	0.169	0.273	0.338	0.391	0.434	0.477	0.520	0.563	0.606	0.649	0.692	0.735	0.778
0.200	0.107	0.188	0.256	0.308	0.351	0.394	0.437	0.480	0.523	0.566	0.609	0.652	0.695	0.738
0.300	0.121	0.180	0.228	0.272	0.315	0.358	0.401	0.444	0.487	0.530	0.573	0.616	0.659	0.702
0.400	0.156	0.198	0.230	0.272	0.314	0.356	0.398	0.440	0.482	0.524	0.566	0.608	0.650	0.692
0.500	0.192	0.218	0.240	0.272	0.304	0.336	0.368	0.400	0.432	0.464	0.496	0.528	0.560	0.592
0.600	0.201	0.216	0.230	0.246	0.262	0.278	0.294	0.310	0.326	0.342	0.358	0.374	0.390	0.406
0.700	0.185	0.186	0.189	0.195	0.196	0.202	0.208	0.214	0.220	0.226	0.232	0.238	0.244	0.250
0.800	0.083	0.079	0.074	0.069	0.061	0.057	0.043	0.042	0.039	0.035	0.031	0.027	0.023	0.019
0.900	0.146	0.152	0.158	0.164	0.172	0.178	0.181	0.171	0.180	0.177	0.169	0.163	0.151	0.143
0.950	0.257	0.264	0.270	0.269	0.273	0.266	0.260	0.242	0.254	0.271	0.274	0.273	0.264	0.256
0.0375	0.071	0.097	0.121	0.144	0.167	0.190	0.213	0.236	0.259	0.282	0.305	0.328	0.351	0.374
0.075	0.136	0.104	0.101	0.104	0.103	0.102	0.101	0.100	0.099	0.098	0.097	0.096	0.095	0.094
0.150	0.140	0.051	0.024	0.012	0.006	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.174	0.106	0.048	0.017	0.005	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.350	0.158	0.108	0.065	0.017	0.005	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.450	0.161	0.123	0.090	0.054	0.025	0.011	0.006	0.003	0.002	0.001	0.001	0.001	0.001	0.001
0.550	0.176	0.148	0.121	0.092	0.071	0.043	0.026	0.010	0.007	0.004	0.003	0.002	0.002	0.002
0.650	0.148	0.134	0.118	0.100	0.086	0.067	0.047	0.029	0.022	0.015	0.009	0.006	0.004	0.003
0.750	0.089	0.091	0.085	0.081	0.074	0.067	0.047	0.029	0.020	0.014	0.009	0.006	0.004	0.003
0.850	0.063	0.047	0.039	0.027	0.022	0.017	0.019	0.012	0.020	0.024	0.028	0.036	0.042	0.049
0.925	0.231	0.209	0.192	0.170	0.157	0.138	0.127	0.113	0.123	0.152	0.167	0.182	0.198	0.215
0.975	0.348	0.328	0.310	0.283	0.267	0.242	0.222	0.195	0.209	0.256	0.260	0.300	0.317	0.334
1.000	0.405	0.390	0.370	0.345	0.335	0.300	0.274	0.240	0.260	0.306	0.342	0.360	0.375	0.400

aNo orifice.  
bPaired value.

NACA

TABLE 4.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-010.00 PROPELLER BLADE SECTION ( $x = 0.45$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 59.50^\circ$ ,  $B = 2$  - Continued(a)  $N = 1600$  rpm.

J Mx $\alpha_x$ $\Delta\theta$ $\alpha_1$ c <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P											
	c/b											
0.000	2.032	2.127	2.218	2.319	2.415	2.457	2.369	2.282	2.173	2.087	2.027	
0.025	.618	.638	.656	.677	.699	.710	.686	.667	.642	.623	.610	
0.050	4.33	3.11	2.01	.87	-.16	-.68	.33	1.28	2.55	3.61	4.39	
0.100	.29	.23	.18	.12	.06	.04	.09	.14	.20	.26	.29	
0.200	1.11	.82	.60	.43	.20	.09	.31	.48	.70	.94	1.12	
0.300	.4613	.3445	.2535	.1823	.0855	.0365	.1300	.2042	.2916	.3903	.4632	
0.400	.0241	.0151	.0079	-.0053	-.0130	-.0177	-.0109	.0002	.0131	.0188	.0228	
0.500												
0.600												
0.700												
0.800												
0.900												
0.950												
0.075	.516	.380	.245	.084	-.085	-.165	-.012	.129	.311	.445	.527	
0.150	.314	.193	.081	-.049	-.184	-.250	-.128	-.013	.134	.250	.322	
0.250	.018	.050	-.033	-.130	-.231	-.280	-.188	-.106	.005	.095	.152	
0.350	-.046	-.060	-.126	-.203	-.284	-.324	-.251	-.183	-.096	-.023	.023	
0.450	-.102	-.112	-.163	-.225	-.290	-.322	-.265	-.213	-.141	-.081	-.043	
0.550	-.163	-.156	-.202	-.251	-.302	-.329	-.281	-.239	-.182	-.133	-.100	
0.650	-.232	-.211	-.245	-.283	-.325	-.349	-.310	-.277	-.230	-.189	-.163	
0.750	-.284	-.226	-.256	-.278	-.308	-.325	-.298	-.277	-.247	-.215	-.195	
0.850	-.335	-.239	-.235	-.239	-.261	-.261	-.248	-.244	-.233	-.204	-.195	
0.925	.002	-.139	-.126	-.099	-.090	-.090	-.098	-.114	-.137	-.140	-.139	
0.975	.089	.008	.031	.073	.100	.105	.087	.054	.017	.005	0	
0.000	.210	.218	.250	.207	.234	.238	.222	.183	.131	.106	.084	
				.270	.295	.313	.290	.245	.250	.215	.195	

<sup>a</sup>No orifice.

NACA

TABLE 4.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-010.00 PROPELLER BLADE SECTION ( $x = 0.45$ ) $\beta_0 = 7.3^\circ$ ,  $\beta_x = 45.2^\circ$ ,  $\beta_x = 59.50^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.56$ .

J $M_x$ $\alpha_x$ $\Delta\theta$ $\Delta\theta$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P													
	c/b													
0.000	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.025	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.050	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.100	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.200	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.300	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.400	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.500	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.600	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.700	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.800	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.900	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.950	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
1.000	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.075	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.150	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.250	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.350	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.450	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.550	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.650	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.750	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.850	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.925	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
0.975	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119
1.000	1.115	1.109	1.094	1.113	1.114	1.115	1.115	1.115	1.115	1.115	1.116	1.117	1.118	1.119

aNo orifice.

NACA

TABLE 4.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-010.00 PROPELLER BLADE SECTION ( $\alpha = 0.45$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 59.50^\circ$ ,  $B = 2$  - Continued(f)  $M = 0.60$ .

J	2.457	2.415	2.396	2.368	2.337	2.310	2.284	2.247	2.228	2.206	2.176	2.155	2.132	2.116	2.088
M <sub>x</sub>	.698	.699	.702	.705	.706	.708	.710	.711	.715	.717	.719	.721	.724	.729	.728
α <sub>x</sub>	-.59	-.16	-.04	.34	.67	.97	1.26	1.68	1.90	2.15	2.51	2.77	3.05	3.25	3.60
Δ <sub>3</sub>	-.01	.05	.07	.11	.15	.18	.21	.25	.26	.28	.30	.31	.32	.33	.34
α <sub>1</sub>	-.09	.17	.23	.29	.35	.42	.50	.58	.64	.71	.78	.85	.91	.98	1.05
α <sub>n</sub>	.0387	.0729	.0961	.1232	.1497	.1784	.2116	.2445	.2677	.2987	.3277	.3561	.3819	.4084	.4374
α <sub>m</sub>	-.0181	-.0134	-.0108	-.0072	-.0052	-.0052	-.0016	.0005	.0048	.0071	.0128	.0147	.0170	.0190	.0205
α <sub>c</sub>															
c/b	Pressure coefficient, P														
Upper surface	0.000	1.128	1.130	1.131	1.132	1.132	1.133	1.133	1.135	1.136	1.136	1.137	1.138	1.141	1.141
	.025	.101	.045	.120	.192	.265	.332	.473	.574	.668	.825	.924	.995	-1.033	-1.082
	.050	.099	.144	.201	.261	.316	.369	.476	.594	.629	.757	.850	.931	-.995	-1.054
	.100	.088	.177	.218	.261	.301	.356	.412	.466	.517	.593	.649	.727	-.819	-.912
	.200	.148	.211	.241	.271	.301	.339	.375	.422	.451	.506	.554	.609	-.655	-.716
	.300	.193	.259	.229	.252	.275	.303	.335	.351	.376	.409	.436	.464	-.483	-.523
	.400	.193	.234	.248	.267	.283	.305	.319	.338	.361	.374	.412	.436	-.447	-.469
	.500	.233	.254	.264	.273	.287	.301	.316	.325	.338	.354	.374	.408	-.412	-.432
	.600	.238	.256	.260	.264	.272	.282	.292	.292	.298	.308	.317	.337	-.335	-.347
	.700	.221	.231	.227	.227	.232	.235	.236	.230	.232	.233	.233	.238	-.239	-.239
Lower surface	0.000	.113	.105	.097	.094	.091	.086	.076	.068	.066	.059	.053	.051	-.037	-.043
	.137	.142	.149	.162	.167	.171	.178	.187	.196	.198	.203	.209	.208	-.220	-.214
	.293	.260	.270	.283	.289	.291	.295	.300	.302	.302	.300	.299	.294	-.299	-.293
	.375	.339	.359	.373	.378	.380	.382	.385	.387	.388	.389	.390	.391	-.392	-.393
	.475	.430	.450	.464	.469	.472	.475	.477	.478	.479	.480	.481	.482	-.483	-.484
	.550	.505	.525	.539	.544	.547	.549	.550	.551	.552	.553	.554	.555	-.556	-.557
	.650	.605	.625	.639	.644	.647	.649	.650	.651	.652	.653	.654	.655	-.656	-.657
	.750	.705	.725	.739	.744	.747	.749	.750	.751	.752	.753	.754	.755	-.756	-.757
	.850	.805	.825	.839	.844	.847	.849	.850	.851	.852	.853	.854	.855	-.856	-.857
	.925	.880	.900	.914	.919	.922	.924	.925	.926	.927	.928	.929	.930	-.931	-.932
a <sub>1</sub>	.370	.350	.332	.344	.338	.330	.326	.325	.323	.322	.321	.320	.319	.318	.317

No orifice.

NACA

TABLE 4.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-010.00 PROPELLER BLADE SECTION ( $x = 0.45$ ) $\theta_0.75R = 45.2^\circ$ ,  $\theta_x = 59.50^\circ$ ,  $B = 2$  - Concluded(g)  $M = 0.65$ .

J	M <sub>x</sub>	α <sub>x</sub> *	Δθ	α <sub>1</sub>	α <sub>n</sub>	α <sub>m</sub>	α <sub>c</sub>	c/b	Pressure coefficient, P															
									2.451	2.442	2.410	2.383	2.358	2.336	2.307	2.284	2.264	2.240	2.216	2.194	2.172	2.149	2.132	
Upper surface	.006	1.150	1.132	1.132	1.152	1.153	1.154	1.156	1.155	1.156	1.159	1.159	1.159	1.159	1.160	1.161	1.161	1.162	1.163					
	.025	.040	.063	.127	.205	.263	.315	.431	.492	.519	.541	.566	.589	.610	.635	.678	.733	.757	.799					
	.050	.132	.202	.256	.321	.368	.414	.457	.485	.514	.544	.575	.609	.641	.679	.727	.763	.777	.806					
	.100	.255	.270	.314	.364	.399	.435	.474	.497	.519	.545	.589	.648	.697	.736	.775	.790	.728	.772					
	.200	.330	.343	.379	.418	.445	.474	.504	.537	.561	.589	.629	.688	.736	.775	.790	.728	.772	.812					
	.300	.351	.361	.391	.422	.441	.465	.492	.517	.541	.566	.609	.668	.716	.755	.770	.708	.752	.794					
	.400	.394	.404	.434	.465	.481	.504	.534	.558	.583	.609	.652	.711	.759	.798	.813	.751	.795	.837					
	.500	.446	.455	.476	.499	.510	.534	.564	.588	.613	.639	.682	.741	.789	.828	.843	.781	.825	.867					
	.600	.451	.457	.474	.487	.489	.504	.534	.557	.583	.609	.652	.711	.759	.798	.813	.751	.795	.837					
	.700	.421	.421	.430	.434	.428	.431	.435	.435	.431	.436	.436	.436	.436	.436	.436	.436	.436	.436	.436				
	.800	.279	.266	.267	.267	.251	.248	.244	.242	.244	.236	.236	.236	.236	.236	.236	.236	.236	.236	.236				
	.900	.005	.008	.009	.009	.026	.030	.035	.040	.044	.044	.044	.044	.044	.044	.044	.044	.044	.044	.044				
.950	.115	.126	.125	.125	.141	.145	.148	.150	.152	.152	.152	.152	.152	.152	.152	.152	.152	.152	.152					
Lower surface	.0375	.167	.130	.090	.033	.016	.051	.095	.118	.152	.196	.231	.252	.276	.294	.324	.324	.294	.252	.231	.252	.276	.294	
	.075	.267	.237	.203	.157	.115	.086	.051	.034	.004	.035	.064	.083	.104	.120	.148	.148	.120	.083	.064	.083	.104	.120	
	.150	.303	.280	.257	.223	.191	.171	.145	.130	.108	.077	.054	.039	.023	.010	.014	.014	.010	.039	.054	.077	.108	.120	
	.250	.354	.338	.322	.296	.270	.255	.234	.225	.207	.182	.160	.150	.136	.125	.106	.106	.125	.150	.160	.182	.207	.220	
	.350	.353	.340	.325	.310	.289	.278	.263	.256	.243	.223	.205	.197	.187	.178	.156	.156	.178	.197	.205	.223	.243	.257	
	.450	.363	.348	.334	.317	.309	.295	.284	.275	.264	.244	.228	.214	.204	.194	.172	.172	.194	.214	.228	.244	.264	.278	
	.550	.387	.380	.379	.369	.356	.351	.345	.344	.341	.339	.337	.335	.332	.330	.306	.306	.330	.335	.337	.339	.344	.348	
	.650	.355	.350	.352	.350	.342	.341	.338	.342	.341	.341	.335	.338	.339	.338	.313	.313	.338	.335	.337	.339	.341	.348	
	.750	.271	.269	.276	.277	.274	.277	.277	.284	.287	.287	.286	.286	.286	.286	.261	.261	.286	.287	.286	.286	.286	.286	.286
	.850	.084	.083	.091	.097	.096	.101	.101	.107	.111	.115	.119	.122	.123	.122	.100	.100	.122	.123	.122	.122	.122	.122	.122
	.925	.111	.109	.100	.093	.094	.090	.082	.078	.072	.072	.066	.061	.059	.059	.038	.038	.059	.059	.059	.059	.059	.059	.059
	.975	.222	.225	.218	.214	.216	.213	.207	.202	.195	.195	.188	.183	.181	.150	.148	.148	.150	.148	.148	.148	.148	.148	.148
1.000	.262	.280	.270	.265	.268	.258	.272	.275	.250	.250	.252	.250	.256	.218	.218	.218	.218	.218	.256	.250	.252	.218	.218	

No orifice.

NACA

TABLE 5.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-007.50 PROPELLER BLADE SECTION ( $x = 0.60$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 51.60^\circ$ ,  $B = 2$ (a)  $N = 1140$  rpm.

J M <sub>x</sub> α <sub>x</sub> Δθ α <sub>1</sub> α <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P											
	c/b											
Upper surface	a <sub>0.000</sub>	1.054 -1.785 -1.375 -1.323 -1.060 -1.716 -1.518 -1.392 -314 -314 -700 -157 -1.082 -0.13	1.057 -2.072 -1.514 -1.036 -.630 -.492 -.432 -.380 -.334 -.258 -.168 -.040 -.041	1.060 -1.245 -.977 -.692 -.524 -.432 -.396 -.362 -.334 -.267 -.182 -.041 -.057	1.065 -.914 -.736 -.528 -.421 -.355 -.338 -.318 -.303 -.247 -.174 -.040 -.098	1.069 -.499 -.469 -.360 -.314 -.277 -.284 -.284 -.282 -.241 -.181 -.056 -.041	1.074 -.126 -.208 -.193 -.208 -.202 -.228 -.245 -.258 -.230 -.184 -.072 -.023	1.072 -.285 -.322 -.265 -.234 -.252 -.263 -.269 -.236 -.183 -.068 -.032	1.066 -.706 -.606 -.442 -.371 -.318 -.314 -.304 -.297 -.247 -.180 -.052 -.048	1.062 -1.076 -.855 -.612 -.476 -.398 -.373 -.350 -.325 -.265 -.187 -.049 -.052	1.058 -1.519 -1.102 -.769 -.571 -.465 -.418 -.378 -.348 -.267 -.177 -.032 -.055	1.055 -2.091 -1.526 -1.342 -.788 -.535 -.440 -.379 -.326 -.251 -.165 -.048 -.019
	a <sub>0.075</sub>	.698 .489 .317 .182 .101 .033 -.019 -.073 -.111 -.088 -.042 -.028 .042	.574 .414 .251 .128 .058 .001 -.043 -.092 -.114 -.076 -.002 -.047 .130	.425 .286 .150 .047 -.012 -.061 -.087 -.128 -.136 -.084 -.006 .073 .159	.268 .166 .063 -.025 -.064 -.101 -.120 -.132 -.150 -.081 .017 .097 .162	-.236 -.195 -.195 -.223 -.219 -.228 -.219 -.221 -.193 -.092 .032 .112 .174	-.110 -.103 -.132 -.176 -.183 -.196 -.194 -.203 -.181 -.088 .030 .120 .167	.146 .077 -.007 -.083 -.111 -.140 -.154 -.178 -.171 -.095 .012 .098 .156	.504 .351 .200 .084 .021 -.032 -.067 -.111 -.125 -.080 .002 .063 .159	.612 .445 .278 .150 .075 .011 -.037 -.087 -.115 -.084 -.023 -.013 .093		
	a <sub>0.150</sub>											
	a <sub>0.250</sub>											
	a <sub>0.350</sub>											
	a <sub>0.450</sub>											
	a <sub>0.550</sub>											
	a <sub>0.650</sub>											
	a <sub>0.750</sub>											
	a <sub>0.850</sub>											
	a <sub>0.950</sub>											
	a <sub>1.000</sub>											

aNo orifice.

NACA

TABLE 5.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-007.50 PROPELLER BLADE SECTION ( $x = 0.60$ )

$P_{0.75R} = 45.2^\circ$ ,  $\beta_x = 51.60^\circ$ ,  $B = 2$  - Continued

(b)  $N = 1350$  rpm.

J	1.841	1.955	2.075	2.164	2.292	2.386	2.449	2.334	2.229	2.126	2.023	1.916
M <sub>x</sub>	0.947	0.564	3.85	2.66	1.03	-0.09	-81	.52	1.82	3.16	4.58	6.13
α <sub>2</sub>	7.28	5.55	1.37	.30	.20	.12	.06	.16	.26	.33	.41	.48
Δθ	1.68	1.37	1.00	.74	.44	.20	-01	.32	.58	.86	1.18	1.48
α <sub>1</sub>	-0.32	0.335	0.390	0.2916	0.1739	0.0784	-0.0035	0.1245	0.2265	0.3355	0.4587	0.5761
α <sub>n</sub>	0.0236	0.0134	0.0016	0.0023	-0.0008	-0.0071	-0.0098	-0.0037	0.0007	0.0028	0.0095	0.0210
c <sub>c</sub>												
Pressure coefficient, P												
c/b												
Upper surface	0.000	1.076	1.081	1.088	1.091	1.097	1.105	1.108	1.101	1.094	1.089	1.079
	0.025	-0.110	-0.077	-0.1213	-0.993	-0.560	-0.275	-0.098	-0.405	-0.757	-1.128	-2.050
	0.050	-1.520	-1.609	-0.806	-0.532	-0.407	-0.334	-0.208	-0.426	-0.659	-0.910	-1.684
	0.100	-1.415	-0.993	-0.727	-0.576	-0.407	-0.285	-0.193	-0.342	-0.481	-0.648	-1.264
	0.200	-1.033	-0.694	-0.557	-0.468	-0.357	-0.280	-0.222	-0.316	-0.407	-0.509	-0.748
	0.300	-0.686	-0.527	-0.462	-0.398	-0.317	-0.263	-0.217	-0.287	-0.353	-0.428	-0.555
	0.400	-0.513	-0.465	-0.427	-0.380	-0.323	-0.283	-0.249	-0.301	-0.348	-0.402	-0.474
	0.500	-0.412	-0.411	-0.395	-0.363	-0.323	-0.297	-0.268	-0.308	-0.339	-0.379	-0.413
	0.600	-0.345	-0.361	-0.362	-0.347	-0.319	-0.305	-0.285	-0.313	-0.328	-0.357	-0.363
	0.700	-0.265	-0.279	-0.292	-0.286	-0.272	-0.268	-0.255	-0.272	-0.274	-0.291	-0.281
	0.800	-0.180	-0.180	-0.198	-0.204	-0.203	-0.208	-0.201	-0.205	-0.198	-0.207	-0.207
	0.900	-0.073	-0.038	-0.045	-0.075	-0.063	-0.075	-0.071	-0.067	-0.056	-0.057	-0.055
0.950	-0.018	0.043	0.054	0.048	0.042	0.031	0.032	0.036	0.050	0.048	0.051	
Lower surface	0.0375	0.627	0.598	0.404	0.244	0.040	-0.147	-0.278	-0.055	0.143	0.313	0.575
	0.075	0.462	0.400	0.270	0.147	-0.002	-0.137	-0.231	-0.069	0.075	0.198	0.412
	0.150	0.292	0.243	0.138	0.040	-0.070	-0.164	-0.229	-0.117	-0.012	0.080	0.250
	0.250	0.157	0.115	0.026	-0.051	-0.138	-0.211	-0.260	-0.175	-0.094	-0.021	0.063
	0.350	0.077	0.047	-0.028	-0.092	-0.161	-0.218	-0.255	-0.189	-0.125	-0.066	0.002
	0.450	0.007	-0.014	-0.076	-0.132	-0.187	-0.231	-0.262	-0.210	-0.157	-0.109	-0.014
	0.550	-0.041	-0.074	-0.106	-0.152	-0.196	-0.231	-0.253	-0.213	-0.171	-0.135	-0.057
	0.650	-0.107	-0.108	-0.146	-0.185	-0.215	-0.231	-0.253	-0.225	-0.198	-0.171	-0.138
	0.750	-0.140	-0.126	-0.154	-0.180	-0.198	-0.209	-0.217	-0.203	-0.188	-0.171	-0.149
	0.850	-0.115	-0.084	-0.124	-0.154	-0.195	-0.209	-0.217	-0.203	-0.188	-0.171	-0.139
	0.925	-0.056	-0.093	-0.093	-0.105	-0.105	-0.103	-0.104	-0.102	-0.103	-0.102	-0.100
	0.975	-0.029	-0.006	0.001	0.004	0.013	0.023	0.027	0.020	0.010	-0.008	-0.030
a <sub>1</sub> 0.000	0.031	0.125	0.165	0.165	0.166	0.115	0.124	0.111	0.100	0.057	0.017	
						0.164	0.180	0.155	0.172	0.160	0.098	

<sup>a</sup>No orifice.

NACA

TABLE 5.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-007.50 PROPELLER BLADE SECTION ( $x = 0.50$ ) $\beta_0, 75R = 45.2^\circ$ ,  $\beta_x = 51.56^\circ$ ,  $B = 2$  - Continued(c)  $N = 1500$  rpm.

J M <sub>∞</sub> α <sub>1</sub> Δ α <sub>1</sub> α <sub>n</sub> α <sub>m</sub> α <sub>c</sub>	Pressure coefficient, P													
	c/h													
0.000	1.870	1.961	2.050	2.138	2.237	2.318	2.463	2.405	2.292	2.181	2.102	2.006	1.940	
0.025	1.609	1.620	1.640	1.655	1.675	1.688	1.718	1.706	1.682	1.662	1.647	1.628	1.618	
0.050	1.446	1.477	1.500	1.512	1.527	1.541	1.571	1.559	1.537	1.514	1.491	1.468	1.445	
0.075	1.281	1.312	1.335	1.347	1.362	1.376	1.406	1.394	1.372	1.349	1.326	1.303	1.280	
0.100	1.116	1.147	1.170	1.182	1.197	1.211	1.241	1.229	1.207	1.184	1.161	1.138	1.115	
0.125	0.951	0.982	1.005	1.017	1.032	1.046	1.076	1.064	1.042	1.019	0.996	0.973	0.950	
0.150	0.786	0.817	0.840	0.852	0.867	0.881	0.911	0.899	0.877	0.854	0.831	0.808	0.785	
0.175	0.621	0.652	0.675	0.687	0.702	0.716	0.746	0.734	0.712	0.689	0.666	0.643	0.620	
0.200	0.456	0.487	0.510	0.522	0.537	0.551	0.581	0.569	0.547	0.524	0.501	0.478	0.455	
0.225	0.291	0.322	0.345	0.357	0.372	0.386	0.416	0.404	0.382	0.359	0.336	0.313	0.290	
0.250	0.126	0.157	0.180	0.192	0.207	0.221	0.251	0.239	0.217	0.194	0.171	0.148	0.125	
0.275	-0.039	-0.008	0.015	0.027	0.042	0.056	0.086	0.074	0.052	0.029	0.006	-0.017	-0.040	
0.300	-0.204	-0.173	-0.150	-0.138	-0.123	-0.107	-0.077	-0.065	-0.043	-0.020	0.003	0.026	0.049	
0.325	-0.369	-0.338	-0.315	-0.303	-0.288	-0.272	-0.242	-0.230	-0.208	-0.185	-0.162	-0.139	-0.116	
0.350	-0.534	-0.503	-0.480	-0.468	-0.453	-0.437	-0.407	-0.395	-0.373	-0.350	-0.327	-0.304	-0.281	
0.375	-0.699	-0.668	-0.645	-0.633	-0.618	-0.602	-0.572	-0.560	-0.538	-0.515	-0.492	-0.469	-0.446	
0.400	-0.864	-0.833	-0.810	-0.798	-0.783	-0.767	-0.737	-0.725	-0.703	-0.680	-0.657	-0.634	-0.611	
0.425	-1.029	-1.000	-0.977	-0.965	-0.950	-0.934	-0.904	-0.892	-0.870	-0.847	-0.824	-0.801	-0.778	
0.450	-1.194	-1.165	-1.142	-1.130	-1.115	-1.099	-1.069	-1.057	-1.035	-1.012	-0.989	-0.966	-0.943	
0.475	-1.359	-1.330	-1.307	-1.295	-1.280	-1.264	-1.234	-1.222	-1.200	-1.177	-1.154	-1.131	-1.108	
0.500	-1.524	-1.495	-1.472	-1.460	-1.445	-1.429	-1.399	-1.387	-1.365	-1.342	-1.319	-1.296	-1.273	
0.525	-1.689	-1.660	-1.637	-1.625	-1.610	-1.594	-1.564	-1.552	-1.530	-1.507	-1.484	-1.461	-1.438	
0.550	-1.854	-1.825	-1.802	-1.790	-1.775	-1.759	-1.729	-1.717	-1.695	-1.672	-1.649	-1.626	-1.603	
0.575	-2.019	-1.990	-1.967	-1.955	-1.940	-1.924	-1.894	-1.882	-1.860	-1.837	-1.814	-1.791	-1.768	
0.600	-2.184	-2.155	-2.132	-2.120	-2.105	-2.089	-2.059	-2.047	-2.025	-2.002	-1.979	-1.956	-1.933	
0.625	-2.349	-2.320	-2.297	-2.285	-2.270	-2.254	-2.224	-2.212	-2.190	-2.167	-2.144	-2.121	-2.098	
0.650	-2.514	-2.485	-2.462	-2.450	-2.435	-2.419	-2.389	-2.377	-2.355	-2.332	-2.309	-2.286	-2.263	
0.675	-2.679	-2.650	-2.627	-2.615	-2.600	-2.584	-2.554	-2.542	-2.520	-2.497	-2.474	-2.451	-2.428	
0.700	-2.844	-2.815	-2.792	-2.780	-2.765	-2.749	-2.719	-2.707	-2.685	-2.662	-2.639	-2.616	-2.593	
0.725	-3.009	-2.980	-2.957	-2.945	-2.930	-2.914	-2.884	-2.872	-2.850	-2.827	-2.804	-2.781	-2.758	
0.750	-3.174	-3.145	-3.122	-3.110	-3.095	-3.079	-3.049	-3.037	-3.015	-2.992	-2.969	-2.946	-2.923	
0.775	-3.339	-3.310	-3.287	-3.275	-3.260	-3.244	-3.214	-3.202	-3.180	-3.157	-3.134	-3.111	-3.088	
0.800	-3.504	-3.475	-3.452	-3.440	-3.425	-3.409	-3.379	-3.367	-3.345	-3.322	-3.299	-3.276	-3.253	
0.825	-3.669	-3.640	-3.617	-3.605	-3.590	-3.574	-3.544	-3.532	-3.510	-3.487	-3.464	-3.441	-3.418	
0.850	-3.834	-3.805	-3.782	-3.770	-3.755	-3.739	-3.709	-3.697	-3.675	-3.652	-3.629	-3.606	-3.583	
0.875	-3.999	-3.970	-3.947	-3.935	-3.920	-3.904	-3.874	-3.862	-3.840	-3.817	-3.794	-3.771	-3.748	
0.900	-4.164	-4.135	-4.112	-4.100	-4.085	-4.069	-4.039	-4.027	-4.005	-3.982	-3.959	-3.936	-3.913	
0.925	-4.329	-4.300	-4.277	-4.265	-4.250	-4.234	-4.204	-4.192	-4.170	-4.147	-4.124	-4.101	-4.078	
0.950	-4.494	-4.465	-4.442	-4.430	-4.415	-4.399	-4.369	-4.357	-4.335	-4.312	-4.289	-4.266	-4.243	
0.975	-4.659	-4.630	-4.607	-4.595	-4.580	-4.564	-4.534	-4.522	-4.500	-4.477	-4.454	-4.431	-4.408	
1.000	-4.824	-4.795	-4.772	-4.760	-4.745	-4.729	-4.699	-4.687	-4.665	-4.642	-4.619	-4.596	-4.573	
Upper surface														
0.0375	0.653	0.621	0.471	0.335	0.174	0.003	-0.331	-0.164	0.081	0.257	0.392	0.520	0.607	
0.075	0.491	0.463	0.333	0.222	0.100	-0.025	-0.140	-0.163	0.034	0.163	0.268	0.379	0.452	
0.150	0.362	0.304	0.189	0.103	0.009	-0.085	-0.254	-0.166	-0.039	0.056	0.137	0.221	0.289	
0.250	0.180	0.172	0.069	-0.003	-0.079	-0.154	-0.285	-0.213	-0.115	-0.041	0.024	0.094	0.153	
0.350	0.099	0.101	0.007	-0.092	-0.113	-0.175	-0.278	-0.220	-0.143	-0.085	-0.029	0.030	0.082	
0.450	0.027	0.037	-0.048	-0.101	-0.150	-0.200	-0.284	-0.234	-0.172	-0.126	-0.082	-0.030	0.014	
0.550	-0.025	-0.066	-0.084	-0.128	-0.168	-0.206	-0.273	-0.232	-0.184	-0.148	-0.113	-0.069	-0.031	
0.650	-0.094	-0.133	-0.166	-0.196	-0.223	-0.246	-0.268	-0.236	-0.206	-0.183	-0.153	-0.120	-0.091	
0.750	-0.129	-0.144	-0.159	-0.166	-0.184	-0.199	-0.222	-0.198	-0.186	-0.176	-0.160	-0.137	-0.113	
0.850	-0.104	-0.081	-0.081	-0.089	-0.093	-0.091	-0.086	-0.074	-0.084	-0.093	-0.088	-0.081	-0.075	
0.925	-0.047	-0.037	0.014	0.018	0.028	0.040	0.058	0.068	0.043	0.022	0.013	0.009	0	
0.975	-0.022	0.047	0.082	0.100	0.119	0.141	0.157	0.172	0.137	0.104	0.088	0.074	0.044	
0.990	-0.005	0.139	0.128	0.150	0.172	0.195	0.210	0.227	0.185	0.148	0.130	0.110	0.070	
Lower surface														

No orifice.

NACA



TABLE 5.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-007.50 PROPELLER BLADE SECTION ( $\alpha = 0.60$ ) $\beta_0, 75R = 45.2^\circ$ ,  $\beta_x = 51.60^\circ$ ,  $B = 2$  - Continued(d)  $N = 1600$  rpm.

J	1.990	2.063	2.135	2.228	2.304	2.387	2.446	2.449	2.359	2.283	2.199	2.104	2.036
$M_x$	.672	.684	.695	.715	.729	.748	.759	.752	.739	.722	.706	.686	.675
$\alpha_x^*$	5.05	4.02	3.04	1.83	.89	-1.0	-1.78	-1.47	.23	1.14	2.20	3.46	4.39
$\Delta\delta$	.81	.72	.62	.47	.35	.21	.11	.16	.26	.38	.52	.67	.76
$\alpha_1$	1.63	1.39	1.07	.77	.52	.23	.01	.10	.34	.83	.83	1.20	1.50
$\alpha_m$	.6348	.5395	.4213	.3013	.2052	.0923	.0032	.0387	.1338	.2303	.3265	.4684	.5839
$c_c$	.0215	.0149	.0079	.0025	-.0030	-.0098	-.0148	-.0135	-.0109	-.0019	.0036	.0125	.0197
Pressure coefficient, P													
c/p													
Upper surface													
0.000	1.118	1.123	1.127	1.135	1.141	1.148	1.152	1.150	1.145	1.138	1.132	1.124	1.120
.025	-2.095	-1.801	-1.364	-1.944	-1.581	-1.243	-1.063	-1.141	-1.352	-1.692	-1.121	-1.543	-1.930
.050	-2.040	-1.756	-1.376	-1.898	-1.597	-1.336	-1.191	-1.293	-1.425	-1.671	-1.007	-1.508	-1.867
.100	-1.833	-1.545	-1.190	-1.750	-1.448	-1.291	-1.195	-1.238	-1.347	-1.490	-1.518	-1.566	-1.654
.200	-1.586	-1.297	-1.045	-1.494	-1.403	-1.243	-1.195	-1.238	-1.339	-1.429	-1.518	-1.583	-1.777
.300	-1.339	-1.051	-0.798	-1.247	-1.156	-1.096	-1.096	-1.096	-1.320	-1.376	-1.443	-1.494	-1.520
.400	-1.092	-0.804	-0.551	-0.994	-0.903	-0.843	-0.843	-0.843	-1.341	-1.382	-1.423	-1.462	-1.482
.500	-0.845	-0.557	-0.304	-0.747	-0.656	-0.596	-0.596	-0.596	-1.352	-1.375	-1.400	-1.421	-1.436
.600	-0.598	-0.310	-0.057	-0.490	-0.399	-0.339	-0.345	-0.348	-1.358	-1.365	-1.375	-1.386	-1.392
.700	-0.351	-0.063	.018	-0.243	-0.152	-0.092	-0.303	-0.305	-1.305	-1.301	-1.298	-1.301	-1.301
.800	-0.104	.018	.261	.018	.109	.169	-0.286	-0.226	-1.220	-1.207	-1.195	-1.190	-1.190
.900	.017	.016	.020	-.022	-.040	-.073	-0.059	-0.058	-.054	-.037	-.022	-.015	-.016
.950	.082	.088	.085	.085	.073	.065	.059	.059	.059	.076	.086	.089	.085
Lower surface													
.0375	.544	.463	.351	.211	.053	-.144	-.293	-.231	-.073	.101	.252	.400	.492
.075	.402	.333	.239	.130	.012	-.134	-.242	-.194	-.080	.047	.160	.277	.356
.150	.251	.193	.116	.032	-.062	-.168	-.248	-.215	-.130	.035	.054	.149	.213
.250	.123	.073	.005	-.065	-.142	-.227	-.294	-.265	-.195	-.118	-.046	.033	.089
.350	.056	.011	-.047	-.106	-.168	-.237	-.294	-.269	-.211	-.149	-.090	-.023	.027
.450	-.006	-.047	-.098	-.149	-.199	-.257	-.304	-.284	-.234	-.185	-.136	-.077	-.034
.550	-.049	-.083	-.127	-.168	-.211	-.257	-.295	-.278	-.238	-.199	-.159	-.110	-.072
.650	-.102	-.131	-.168	-.201	-.232	-.263	-.289	-.278	-.250	-.222	-.194	-.153	-.123
.750	-.117	-.139	-.168	-.189	-.206	-.220	-.235	-.230	-.212	-.203	-.186	-.157	-.132
.850	-.060	-.073	-.090	-.094	-.092	-.087	-.087	-.089	-.087	-.096	-.095	-.083	-.069
.925	.032	.028	.023	.030	.045	.060	.066	.060	.059	.037	.025	.024	.028
.975	.099	.100	.103	.121	.143	.161	.164	.160	.161	.134	.111	.098	.097
1.000	.139	.145	.147	.179	.196	.218	.225	.205	.204	.171	.156	.125	.130

<sup>a</sup> No orifice.

NACA

TABLE 5.-- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-007.50 PROPELLER BLADE SECTION ( $\alpha = 0.50$ ) $\theta_0.75R = 45.2^\circ$ ,  $\theta_2 = 51.60^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.56$ .

J $M_x$ $\alpha_1^*$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P												
	2.054	2.087	2.102	2.153	2.183	2.199	2.255	2.282	2.309	2.338	2.371	2.410	2.446
Upper surface	1.153 -1.236 -1.299 -1.272 -1.174 -1.879 -1.494 -1.459 -1.410 -1.600 -1.308 -1.183 -1.007 -1.118	1.151 -1.179 -1.164 -1.261 -1.240 -1.225 -1.103 -1.539 -1.501 -1.457 -1.408 -1.313 -1.188 -1.009 -1.118	1.149 -1.164 -1.161 -1.261 -1.225 -1.222 -1.103 -1.506 -1.499 -1.459 -1.410 -1.313 -1.188 -1.002 -1.111	1.148 -1.092 -1.198 -1.105 -1.105 -1.563 -1.496 -1.481 -1.442 -1.400 -1.306 -1.184 -1.003 -1.109	1.147 -1.039 -1.131 -1.116 -1.063 -1.546 -1.465 -1.450 -1.420 -1.385 -1.300 -1.182 -1.001 -1.106	1.144 -1.014 -1.061 -1.693 -1.693 -1.532 -1.452 -1.388 -1.414 -1.382 -1.300 -1.189 -1.008 -1.100	1.143 -1.791 -1.769 -1.528 -1.460 -1.396 -1.399 -1.367 -1.355 -1.368 -1.296 -1.192 -1.017 -1.093	1.141 -1.610 -1.611 -1.457 -1.405 -1.355 -1.367 -1.355 -1.355 -1.291 -1.197 -1.030 -1.083	1.140 -1.523 -1.446 -1.420 -1.379 -1.340 -1.355 -1.355 -1.356 -1.336 -1.351 -1.292 -1.203 -1.030 -1.074	1.138 -1.396 -1.447 -1.357 -1.335 -1.312 -1.329 -1.309 -1.336 -1.336 -1.286 -1.202 -1.045 -1.066	1.137 -1.272 -1.251 -1.299 -1.208 -1.286 -1.247 -1.309 -1.323 -1.330 -1.289 -1.216 -1.058 -1.049	1.135 -1.143 -1.252 -1.230 -1.247 -1.247 -1.279 -1.297 -1.297 -1.310 -1.276 -1.215 -1.059 -1.044	1.133 -1.034 -1.162 -1.169 -1.205 -1.213 -1.249 -1.249 -1.288 -1.208 -1.060 -1.039
Lower surface	0.375 0.075 0.150 0.250 0.350 0.450 0.550 0.650 0.750 0.850 0.925 0.950 0.975 0.990	0.392 0.279 0.151 0.035 -0.020 -0.077 -0.115 -0.160 -0.166 -0.080 0.041 0.135 0.186	0.362 0.252 0.127 0.014 -0.040 -0.094 -0.129 -0.173 -0.177 -0.101 0.029 0.120 0.160	0.309 0.210 0.091 -0.016 -0.066 -0.117 -0.148 -0.188 -0.188 -0.095 0.028 0.118 0.160	0.266 0.174 0.066 -0.039 -0.082 -0.131 -0.158 -0.196 -0.192 -0.097 0.029 0.121 0.170	0.236 0.150 0.066 -0.057 -0.100 -0.145 -0.172 -0.207 -0.201 -0.104 0.024 0.117 0.160	0.143 0.078 -0.012 -0.102 -0.133 -0.175 -0.194 -0.222 -0.207 -0.102 0.032 0.131 0.180	0.071 0.023 -0.053 -0.133 -0.157 -0.192 -0.205 -0.229 -0.212 -0.097 0.040 0.141 0.200	0.026 -0.078 -0.078 -0.174 -0.205 -0.216 -0.234 -0.216 -0.096 -0.042 0.145 0.196	-0.038 -0.056 -0.110 -0.189 -0.214 -0.220 -0.235 -0.207 -0.089 -0.055 -0.159 -0.215	-0.127 -0.121 -0.159 -0.213 -0.219 -0.240 -0.252 -0.248 -0.214 -0.089 -0.166 -0.225	-0.219 -0.186 -0.202 -0.244 -0.256 -0.240 -0.254 -0.215 -0.085 -0.171 -0.229	-0.310 -0.248 -0.248 -0.274 -0.265 -0.272 -0.289 -0.259 -0.281 -0.068 -0.176 -0.245

No orifice.

NACA

TABLE 5.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-007.50 PROPELLER BLADE SECTION ( $\alpha = 0.60$ ) $\theta_0.75R = 45.2^\circ$ ,  $\beta x = 51.60^\circ$ ,  $B = 2$  - Continued(A)  $M = 0.60$ .

J	2.093	2.115	2.143	2.171	2.200	2.222	2.244	2.266	2.295	2.320	2.342	2.370	2.400	2.430	2.451
$M_x$	.809	.805	.800	.799	.795	.792	.786	.783	.779	.776	.770	.768	.764	.761	.751
$\alpha_x$	3.61	3.31	2.93	2.57	2.19	1.91	1.63	1.35	1.03	.69	.43	.10	-.25	-.60	-.84
$\Delta\theta$	.76	.74	.72	.68	.63	.59	.54	.50	.44	.39	.35	.29	.22	.16	.11
$\alpha_1$	1.42	1.32	1.17	1.06	.95	.84	.70	.65	.53	.46	.37	.27	.19	.07	-.01
$c_n$	.5548	.5161	.4574	.4142	.3729	.3284	.2768	.2361	.2094	.1806	.1465	.1084	.0745	.0290	-.0052
$c_m$	-.0064	-.0010	.0010	.0016	.0026	.0015	.0005	-.0002	-.0041	-.0078	-.0107	-.0116	-.0135	-.0147	-.0154
$c_c$	-.0012	-.0010	-.0006	0	.0007	.0022	.0037	.0045	.0055	.0062	.0068				
Pressure coefficient, P															
c/b															
Upper surface	$a_0$ .000	1.175	1.173	1.171	1.170	1.168	1.164	1.163	1.161	1.160	1.158	1.157	1.155	1.154	1.151
	.025	.897	.883	.875	.862	.854	.847	.846	.843	.840	.837	.838	.839	.840	.841
	.050	-1.009	-.998	-.985	-.969	-.954	-.947	-.948	-.947	-.946	-.943	-.940	-.939	-.938	-.937
	.100	-1.001	-.988	-.960	-.926	-.889	-.853	-.817	-.778	-.742	-.703	-.666	-.631	-.598	-.568
	.200	.933	.914	.864	.811	.746	.633	.557	.467	.426	.372	.327	.281	.243	.208
	.300	.877	.847	.771	.694	.605	.503	.433	.431	.403	.366	.332	.298	.261	.232
	.400	.863	.808	.619	.448	.330	.248	.184	.144	.114	.096	.080	.067	.056	.047
	.500	.808	.662	.484	.353	.252	.184	.142	.111	.089	.079	.072	.063	.054	.048
	.600	.563	.446	.346	.275	.212	.178	.146	.122	.106	.092	.081	.070	.060	.057
	.700	.325	.329	.329	.329	.321	.318	.312	.317	.314	.310	.318	.314	.308	.311
Lower surface	$a_1$ .000	1.158	1.154	1.151	1.148	1.145	1.142	1.139	1.136	1.133	1.130	1.127	1.124	1.121	1.118
	.025	.897	.883	.875	.862	.854	.847	.846	.843	.840	.837	.838	.839	.840	.841
	.050	-1.009	-.998	-.985	-.969	-.954	-.947	-.948	-.947	-.946	-.943	-.940	-.939	-.938	-.937
	.100	-1.001	-.988	-.960	-.926	-.889	-.853	-.817	-.778	-.742	-.703	-.666	-.631	-.598	-.568
	.200	.933	.914	.864	.811	.746	.633	.557	.467	.426	.372	.327	.281	.243	.208
	.300	.877	.847	.771	.694	.605	.503	.433	.431	.403	.366	.332	.298	.261	.232
	.400	.863	.808	.619	.448	.330	.248	.184	.144	.114	.096	.080	.067	.056	.047
	.500	.808	.662	.484	.353	.252	.184	.142	.111	.089	.079	.072	.063	.054	.048
	.600	.563	.446	.346	.275	.212	.178	.146	.122	.106	.092	.081	.070	.060	.057
	.700	.325	.329	.329	.329	.321	.318	.312	.317	.314	.310	.318	.314	.308	.311

No orifices.

NACA

TABLE 5.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-007.50 PROPELLER BLADE SECTION ( $\alpha = 0.60$ ) $\rho_0, 75R = 45.2^\circ, \beta_x = 51.60^\circ, B = 2$  - Concluded(a)  $M = 0.65$ .

J $M_x$ $\alpha_x$ $\alpha_1$ $\alpha_n$ $c_m$ $c_c$	2.452	2.420	2.390	2.369	2.360	2.316	2.291	2.272	2.245	2.233	2.208	2.176	2.159	2.134
	.824 -.85 -.16 -.02 -.0097 -.0121 .0096	.825 -.48 .22 .06 .0232 -.0113 .0094	.829 -.14 .26 .16 .0642 -.0133 .0092	.832 .11 .29 .29 .1139 -.0112 .0093	.840 .21 .30 .35 .1364 -.0134 .0097	.838 .74 .36 .48 .1877 -.0113 .0090	.842 .105 .40 .59 .2316 -.0132 .0097	.847 1.28 .42 .68 .2674 -.0103 .0108	.849 1.62 .46 .76 .2994 -.0136 .0111	.857 1.77 .48 .83 .3271 -.0143 .0126	.861 2.09 .50 .91 .3561 -.0156 .0145	.861 2.50 .54 1.02 .4013 -.0236 .0152	.864 2.72 .56 1.10 .4316 -.0274 .0152	.869 3.05 .58 1.12 .4381 -.0246 .0134
Pressure coefficient, P														
c/h														
	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface	Upper surface
$\rho_0, 000$	1.181	1.182	1.183	1.185	1.189	1.188	1.190	1.192	1.193	1.196	1.199	1.199	1.200	1.202
.025	-.015	-.085	-.144	-.209	-.261	-.341	-.404	-.441	-.483	-.492	-.516	-.546	-.561	-.572
.050	-.169	-.234	-.292	-.358	-.417	-.507	-.563	-.592	-.628	-.640	-.665	-.692	-.702	-.708
.100	-.178	-.226	-.263	-.307	-.341	-.403	-.456	-.516	-.588	-.611	-.645	-.681	-.695	-.704
.200	-.243	-.281	-.311	-.343	-.370	-.418	-.473	-.507	-.538	-.548	-.580	-.630	-.650	-.663
.300	-.249	-.284	-.308	-.336	-.356	-.403	-.442	-.479	-.524	-.543	-.571	-.609	-.629	-.640
.400	-.335	-.367	-.394	-.417	-.431	-.462	-.483	-.507	-.543	-.562	-.592	-.629	-.646	-.653
.500	-.396	-.424	-.444	-.463	-.479	-.514	-.543	-.579	-.579	-.609	-.633	-.659	-.677	-.686
.600	-.454	-.477	-.503	-.525	-.542	-.580	-.616	-.631	-.642	-.657	-.698	-.728	-.742	-.745
.700	-.364	-.409	-.440	-.477	-.502	-.557	-.607	-.699	-.713	-.720	-.748	-.793	-.817	-.820
.800	-.234	-.236	-.231	-.226	-.213	-.210	-.207	-.214	-.221	-.226	-.237	-.258	-.286	-.271
.900	-.019	-.016	-.008	-.003	.009	.014	.018	.016	.005	.013	.043	.085	.137	.142
.950	.109	.110	.117	.119	.125	.126	.123	.111	.095	.070	.038	.008	-.045	-.070
.0375	-.295	-.233	-.173	-.113	-.059	-.006	.042	.085	.119	.152	.183	.221	.244	.270
.075	-.243	-.196	-.152	-.106	-.067	-.027	.011	.045	.073	.101	.128	.160	.180	.200
.150	-.261	-.232	-.194	-.160	-.127	-.099	-.070	-.043	-.030	.003	.026	.053	.071	.091
.250	-.322	-.295	-.268	-.239	-.213	-.191	-.166	-.143	-.124	-.103	-.083	-.061	-.045	-.025
.350	-.324	-.303	-.282	-.259	-.236	-.220	-.202	-.181	-.165	-.146	-.128	-.108	-.096	-.080
.450	-.358	-.342	-.325	-.306	-.286	-.274	-.260	-.243	-.231	-.213	-.199	-.182	-.170	-.156
.550	-.366	-.357	-.344	-.331	-.315	-.310	-.299	-.287	-.277	-.266	-.253	-.240	-.233	-.217
.650	-.367	-.368	-.366	-.358	-.346	-.350	-.350	-.343	-.343	-.340	-.333	-.327	-.325	-.313
.750	-.291	-.301	-.306	-.305	-.300	-.314	-.322	-.337	-.345	-.368	-.380	-.387	-.404	-.404
.850	-.102	-.110	-.115	-.115	-.114	-.125	-.136	-.149	-.158	-.178	-.200	-.212	-.252	-.286
.925	.068	.059	.057	.056	.058	.046	.033	.019	.005	.012	.034	.039	.076	.114
.975	.178	.171	.170	.167	.166	.154	.137	.119	.099	.077	.049	.031	.010	-.051
.990	.236	.244	.236	.250	.254	.200	.204	.165	.148	.120	.080	.093	.055	-.038

No orifice.

NACA

TABLE 6.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-006.62 PROPELLER BLADE SECTION ( $\alpha = 0.70$ )

$$\theta_{0.75R} = 45.2^\circ, \theta_x = 47.35^\circ, B = 2$$

(a)  $N = 1140 \text{ rpm.}$

Pressure coefficient, P										
Upper surface										
$\frac{c}{b}$	$\frac{J}{M_{\infty}^2}$	$\frac{\Delta_1}{\Delta_0}$	$\frac{\Delta_2}{\Delta_0}$	$\frac{\Delta_3}{\Delta_0}$	$\frac{\Delta_4}{\Delta_0}$	$\frac{\Delta_5}{\Delta_0}$	$\frac{\Delta_6}{\Delta_0}$	$\frac{\Delta_7}{\Delta_0}$	$\frac{\Delta_8}{\Delta_0}$	$\frac{\Delta_9}{\Delta_0}$
0.000	1.065	1.067	1.073	1.076	1.080	1.085	1.083	1.078	1.074	1.070
0.025	-1.795	-1.765	-1.718	-1.699	-1.680	-1.666	-1.654	-1.644	-1.635	-1.626
0.050	-1.656	-1.532	-1.409	-1.288	-1.170	-1.055	-0.942	-0.831	-0.722	-0.614
0.100	-1.262	-1.121	-0.966	-0.817	-0.674	-0.535	-0.400	-0.268	-0.139	0.000
0.200	-1.010	-0.719	-0.508	-0.341	-0.212	-0.109	-0.030	0.033	0.098	0.164
0.300	-0.777	-0.496	-0.304	-0.161	-0.054	0.021	0.071	0.116	0.156	0.191
0.400	-0.579	-0.399	-0.265	-0.161	-0.084	0.000	0.084	0.156	0.214	0.260
0.500	-0.447	-0.354	-0.247	-0.161	-0.094	0.000	0.094	0.161	0.214	0.260
0.600	-0.333	-0.299	-0.206	-0.139	-0.084	0.000	0.084	0.139	0.188	0.233
0.700	-0.254	-0.238	-0.175	-0.117	-0.071	0.000	0.071	0.117	0.166	0.211
0.800	-0.175	-0.157	-0.117	-0.071	-0.046	0.000	0.046	0.071	0.100	0.127
0.900	-0.101	-0.046	-0.036	-0.017	0.000	0.036	0.061	0.086	0.111	0.136
0.950	-0.061	-0.021	-0.058	-0.033	0.000	0.033	0.058	0.083	0.108	0.133
0.375	0.682	0.614	0.481	0.366	0.261	0.166	0.086	0.026	0.000	0.000
0.075	0.489	0.420	0.301	0.212	0.127	0.055	0.026	0.000	0.000	0.000
0.150	0.323	0.266	0.168	0.100	0.055	0.026	0.000	0.000	0.000	0.000
0.250	0.189	0.142	0.067	0.033	0.017	0.000	0.000	0.000	0.000	0.000
0.350	0.100	0.061	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.450	0.046	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.550	0.037	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.650	0.068	0.076	0.104	0.139	0.168	0.195	0.219	0.249	0.274	0.299
0.750	0.103	0.095	0.118	0.148	0.179	0.209	0.239	0.269	0.294	0.319
0.850	0.120	0.095	0.108	0.132	0.158	0.184	0.210	0.236	0.262	0.288
0.925	0.078	0.105	0.086	0.095	0.108	0.121	0.134	0.147	0.160	0.173
0.975	0.058	0.027	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.000	-0.047	0.066	0.117	0.133	0.158	0.183	0.203	0.220	0.233	0.246

<sup>a</sup>No orifice.

TABLE 6.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-006.62 PROPELLER BLADE SECTION ( $x = 0.70$ )

$P_{0.75R} = 45.2^\circ$ ,  $\beta_x = 47.35^\circ$ ,  $B = 2$  - Continued

(b)  $N = 1350$  rpm.

J $M_x$ $\frac{c_{x1}}{A}$ $\Delta$ $\alpha_1$ $c_m$ $c_c$	Pressure coefficient, P										
	c/b										
Upper surface	1.833	1.936	2.046	2.158	2.241	2.359	2.430	2.399	2.303	2.206	2.083
	.592	.607	.624	.638	.650	.670	.684	.677	.661	.645	.627
	7.54	5.99	4.41	2.89	1.81	.34	-.51	-.14	1.03	2.26	3.90
	.78	.74	.62	.47	.36	.20	.10	.15	.28	.41	.57
	1.89	1.58	1.33	.93	.62	.30	.01	.16	.41	.76	1.18
	.6703	.5639	.4761	.3342	.2245	.1097	.0042	.0587	.1494	.2735	.4284
	.0216	.0205	.0147	.0064	.0028	-.0001	-.0068	-.0036	.0013	.0038	.0110
Lower surface	1.090	1.095	1.101	1.106	1.110	1.118	1.123	1.120	1.114	1.108	1.102
	-1.713	-1.643	-2.189	-1.285	-1.117	-1.118	-1.117	-1.249	-1.529	-1.961	-1.974
	-1.713	-1.640	-1.262	-.693	-.546	-.324	-.148	-.237	-.410	-.606	-1.009
	-1.596	-1.487	-.724	-.589	-.439	-.293	-.174	-.235	-.349	-.501	-.683
	-1.008	-.661	-.563	-.471	-.383	-.279	-.203	-.244	-.317	-.417	-.543
	-.668	-.492	-.463	-.390	-.330	-.255	-.205	-.234	-.284	-.352	-.446
	-.507	-.376	-.379	-.352	-.308	-.252	-.216	-.235	-.273	-.321	-.392
	-.324	-.312	-.328	-.343	-.315	-.271	-.246	-.261	-.290	-.321	-.373
	-.248	-.245	-.269	-.308	-.289	-.261	-.246	-.258	-.273	-.291	-.328
	-.171	-.151	-.174	-.175	-.178	-.236	-.231	-.237	-.244	-.251	-.271
No orifice.	-.085	-.031	-.034	-.034	-.043	-.045	-.056	-.054	-.044	-.034	-.033
	-.040	-.035	-.061	-.067	-.062	-.061	-.047	-.048	-.062	-.071	-.066
	.699	.634	.532	.385	.216	.035	-.160	-.065	-.109	.303	.490
	.506	.441	.344	.222	.089	-.053	-.196	-.128	.003	.198	.310
	.338	.285	.210	.116	.014	-.086	-.185	-.138	-.047	.066	.182
	.206	.162	.097	.020	-.062	-.136	-.209	-.175	-.106	-.019	.072
	.107	.074	.015	-.047	-.113	-.171	-.228	-.203	-.151	-.075	-.002
	.051	.027	-.020	-.074	-.127	-.174	-.222	-.199	-.156	-.098	-.038
	-.046	-.062	-.099	-.141	-.188	-.221	-.260	-.246	-.217	-.160	-.113
	-.067	-.073	-.099	-.131	-.168	-.192	-.222	-.209	-.186	-.145	-.111

<sup>a</sup>No orifice.

NACA

TABLE 6.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-006.62 PROPELLER BLADE SECTION ( $\alpha = 0.70$ ) $\theta_0.75R = 45.20^\circ$ ,  $\beta_x = 47.35^\circ$ ,  $B = 2$  - Continued(c)  $N = 1500$  rpm.

J M <sub>r</sub> αr' Δs α1 c <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	1.868 .663 7.00 1.08 2.06 .7355 .0342	1.925 .674 6.20 1.06 1.96 .7019 .0321	2.022 .688 4.73 .92 1.61 .5774 .0246	2.092 .701 3.78 .80 1.29 .4645 .0177	2.211 .721 2.20 .58 .85 .3071 .0082	2.324 .743 .77 .36 .44 .1613 .0025	2.447 .764 .70 .12 .03 -.0129 -.0088	2.395 .752 -.09 .22 .20 .0722 -.0044	2.282 .733 1.29 .44 .60 .2155 .0039	2.151 .709 2.98 .69 1.07 .3852 .0116	2.067 .695 3.12 .84 1.47 .5263 .0197	1.967 .676 5.54 1.01 1.80 .6458 .0302	1.893 .664 6.63 1.08 2.07 .7374 .0370	
														Pressure coefficient, P
Upper surface	c/b													
	0.000	1.115	1.119	1.125	1.130	1.137	1.146	1.155	1.150	1.142	1.132	1.127	1.120	1.115
	.025	-2.516	-2.386	-2.059	-1.755	-1.473	-1.146	-.074	-.267	-.755	-1.494	-1.911	-2.255	-2.432
	.050	-2.379	-2.256	-1.918	-1.582	-1.243	-.930	-.124	-.258	-.540	-1.335	-1.738	-2.115	-2.293
	.100	-1.910	-2.066	-1.736	-1.387	-.944	-.373	-.166	-.262	-.444	-.587	-1.510	-1.940	-2.051
	.200	-.820	-.815	-.517	-.459	-.469	-.343	-.211	-.273	-.394	-.512	-.508	-.643	-.825
	.300	-.649	-.467	-.164	-.1519	-.403	-.310	-.219	-.263	-.343	-.512	-.463	-.459	-.825
	.400	-.506	-.422	-.422	-.407	-.361	-.302	-.234	-.267	-.323	-.387	-.414	-.424	-.602
	.500	-.423	-.397	-.402	-.389	-.361	-.324	-.275	-.294	-.334	-.377	-.396	-.414	-.474
	.600	-.332	-.340	-.349	-.342	-.327	-.305	-.275	-.291	-.307	-.335	-.345	-.330	-.403
	.700	-.254	-.272	-.283	-.277	-.273	-.269	-.257	-.265	-.265	-.278	-.283	-.277	-.247
	.800	-.166	-.172	-.184	-.179	-.184	-.187	-.185	-.187	-.179	-.181	-.183	-.177	-.155
.900	-.074	-.031	-.031	-.024	-.031	-.039	-.049	-.047	-.030	-.026	-.029	-.032	-.050	
.950	-.021	-.060	-.069	-.076	-.075	-.071	-.060	-.063	-.079	-.078	-.073	-.064	-.010	
Lower surface	0.075	.701	.663	.565	.483	.308	.101	-.186	-.042	.196	.404	.518	.623	.697
	.075	.509	.472	.382	.308	.160	-.009	-.223	-.117	-.069	.241	.342	.435	.505
	.150	.350	.321	.244	.183	.066	-.057	-.210	-.134	0	.128	.210	.290	.346
	.250	.216	.189	.123	.070	-.038	-.124	-.243	-.184	-.077	.023	.094	.163	.213
	.350	.117	.097	.037	.007	-.088	-.166	-.256	-.215	-.129	-.047	.074	.115	.115
	.450	.060	.046	-.005	-.043	-.113	-.179	-.256	-.219	-.147	-.079	.027	.061	.061
	.550	-.037	-.045	-.089	-.120	-.181	-.239	-.293	-.265	-.147	-.079	.027	.061	.061
	.650	-.058	-.056	-.092	-.120	-.170	-.209	-.251	-.230	-.207	-.150	-.106	-.061	-.035
	.750	-.093	-.078	-.104	-.123	-.159	-.182	-.201	-.191	-.187	-.143	-.114	-.086	-.053
	.850	-.106	-.068	-.081	-.091	-.108	-.112	-.106	-.106	-.106	-.106	-.087	-.072	-.082
	.925	-.048	-.016	-.017	.016	.015	.030	.047	.043	.026	.014	.016	.019	-.025
	.975	-.021	-.086	-.099	.101	.112	.135	.161	.154	.129	.104	.101	.095	.011
1.000	0	.128	.143	.157	.174	.202	.226	.218	.186	.158	.156	.148	.046	

No orifice.

NACA

TABLE 6.-- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-006.62 PROPELLER BLADE SECTION ( $x = 0.70$ )30.75R = 45.2°,  $\beta_x = 47.35^\circ$ , B = 2 - Continued

(d)  $N = 1600$  rpm.

Pressure coefficient, P												
c/b	$\alpha_0$	$\alpha_1$	$\alpha_2$	$\alpha_3$	$\alpha_4$	$\alpha_5$	$\alpha_6$	$\alpha_7$	$\alpha_8$	$\alpha_9$	$\alpha_{10}$	$\alpha_{11}$
Upper surface	1.141	1.148	1.154	1.160	1.167	1.174	1.180	1.175	1.171	1.162	1.156	1.151
1.000	-1.851	-1.575	-1.238	-1.036	-0.827	-0.616	-0.405	-0.191	-0.075	-0.038	-0.027	-0.024
0.950	-1.761	-1.495	-1.216	-0.958	-0.743	-0.532	-0.321	-0.107	-0.087	-0.050	-0.039	-0.036
0.900	-1.696	-1.412	-1.126	-0.765	-0.437	-0.257	-0.153	-0.083	-0.051	-0.031	-0.021	-0.019
0.850	-1.541	-1.272	-0.982	-0.657	-0.400	-0.288	-0.177	-0.098	-0.066	-0.046	-0.036	-0.034
0.800	-1.397	-1.131	-0.847	-0.531	-0.365	-0.289	-0.164	-0.088	-0.056	-0.036	-0.026	-0.024
0.750	-1.264	-1.000	-0.716	-0.400	-0.234	-0.160	-0.085	-0.043	-0.031	-0.021	-0.019	-0.017
0.700	-1.141	-0.877	-0.593	-0.277	-0.111	-0.037	-0.015	-0.003	-0.001	-0.001	-0.001	-0.001
0.650	-1.024	-0.760	-0.476	-0.160	-0.094	-0.020	-0.008	-0.004	-0.002	-0.001	-0.001	-0.001
0.600	-0.911	-0.647	-0.363	-0.047	-0.021	-0.007	-0.003	-0.001	-0.001	-0.001	-0.001	-0.001
0.550	-0.800	-0.536	-0.252	-0.031	-0.015	-0.005	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001
0.500	-0.690	-0.426	-0.142	-0.015	-0.008	-0.003	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.450	-0.580	-0.316	-0.032	-0.008	-0.004	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.400	-0.470	-0.206	-0.016	-0.004	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.350	-0.360	-0.096	-0.006	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.300	-0.250	-0.082	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.250	-0.140	-0.068	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.200	-0.030	-0.036	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.150	-0.020	-0.024	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.100	-0.010	-0.014	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.050	-0.005	-0.006	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
Lower surface	1.141	1.148	1.154	1.160	1.167	1.174	1.180	1.175	1.171	1.162	1.156	1.151
1.000	-1.851	-1.575	-1.238	-1.036	-0.827	-0.616	-0.405	-0.191	-0.075	-0.038	-0.027	-0.024
0.950	-1.761	-1.495	-1.216	-0.958	-0.743	-0.532	-0.321	-0.107	-0.087	-0.050	-0.039	-0.036
0.900	-1.696	-1.412	-1.126	-0.765	-0.437	-0.257	-0.153	-0.083	-0.051	-0.031	-0.021	-0.019</

**NACA**

<sup>a</sup>No orifice.



TABLE 6.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-006.62 PROPELLER BLADE SECTION ( $\alpha = 0.70$ )

$P_{0.75R} = 45.2^\circ$ ,  $\beta_x = 47.35^\circ$ ,  $B = 2$  - Continued

(e)  $M = 0.56$ .

J $M_\infty$ $\alpha_1$ $\Delta\beta$ $\alpha_1$ $\alpha_n$ $\alpha_m$ $\alpha_c$	Pressure coefficient, P											
	Upper surface											
0.000	1.183	1.177	1.175	1.173	1.169	1.168	1.166	1.164	1.162	1.160	1.158	1.156
0.025	-1.053	-1.046	-1.046	-1.041	-1.039	-1.000	-0.966	-0.966	-0.929	-0.891	-0.867	-0.858
0.050	-1.054	-1.051	-1.033	-1.021	-0.998	-0.959	-0.899	-0.896	-0.859	-0.821	-0.797	-0.786
0.100	-1.018	-1.010	-0.984	-0.968	-0.937	-0.895	-0.852	-0.852	-0.815	-0.777	-0.753	-0.749
0.200	-0.983	-0.960	-0.942	-0.922	-0.888	-0.845	-0.804	-0.804	-0.767	-0.729	-0.705	-0.699
0.300	-0.958	-0.946	-0.910	-0.896	-0.862	-0.819	-0.778	-0.778	-0.741	-0.703	-0.679	-0.673
0.400	-0.938	-0.919	-0.887	-0.871	-0.837	-0.794	-0.753	-0.753	-0.716	-0.678	-0.654	-0.648
0.500	-0.941	-0.925	-0.891	-0.875	-0.841	-0.798	-0.757	-0.757	-0.720	-0.682	-0.658	-0.652
0.600	-0.952	-0.942	-0.907	-0.891	-0.857	-0.814	-0.773	-0.773	-0.736	-0.698	-0.674	-0.668
0.700	-0.932	-0.922	-0.887	-0.871	-0.837	-0.794	-0.753	-0.753	-0.716	-0.678	-0.654	-0.648
0.800	-0.929	-0.922	-0.887	-0.871	-0.837	-0.794	-0.753	-0.753	-0.716	-0.678	-0.654	-0.648
0.900	-0.929	-0.922	-0.887	-0.871	-0.837	-0.794	-0.753	-0.753	-0.716	-0.678	-0.654	-0.648
0.950	-0.930	-0.922	-0.887	-0.871	-0.837	-0.794	-0.753	-0.753	-0.716	-0.678	-0.654	-0.648
0.375	0.492	0.473	0.420	0.402	0.367	0.329	0.282	0.282	0.245	0.207	0.173	0.144
0.075	0.330	0.311	0.262	0.244	0.214	0.180	0.140	0.140	0.103	0.065	0.032	0.004
0.150	0.212	0.195	0.152	0.139	0.113	0.085	0.051	0.051	0.014	-0.021	-0.058	-0.088
0.250	0.094	0.080	0.044	0.031	0.009	-0.015	-0.044	-0.044	-0.073	-0.107	-0.137	-0.161
0.350	0.012	0.000	-0.032	-0.043	-0.062	-0.084	-0.107	-0.107	-0.131	-0.150	-0.179	-0.200
0.450	-0.046	-0.063	-0.074	-0.082	-0.096	-0.118	-0.137	-0.137	-0.157	-0.172	-0.199	-0.224
0.550	-0.131	-0.153	-0.159	-0.166	-0.179	-0.196	-0.211	-0.211	-0.227	-0.236	-0.262	-0.273
0.650	-0.138	-0.154	-0.158	-0.161	-0.171	-0.186	-0.197	-0.197	-0.210	-0.223	-0.230	-0.235
0.750	-0.142	-0.149	-0.150	-0.152	-0.161	-0.172	-0.180	-0.180	-0.187	-0.189	-0.194	-0.194
0.850	-0.084	-0.089	-0.090	-0.091	-0.098	-0.105	-0.112	-0.112	-0.116	-0.107	-0.108	-0.104
0.925	0.061	0.053	0.051	0.050	0.042	0.035	0.031	0.029	0.033	0.043	0.041	0.046
0.975	0.164	0.155	0.151	0.151	0.144	0.138	0.134	0.133	0.140	0.148	0.151	0.151
1.000	0.208	0.208	0.204	0.195	0.187	0.195	0.183	0.190	0.188	0.203	0.205	0.206

<sup>a</sup>No orifice.

NACA

TABLE 6.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-006.62 PROPELLER BLADE SECTION ( $\alpha = 0.70$ ) $\theta_0.75R = 45.2^\circ$ ,  $\beta_x = 47.35^\circ$ ,  $B = 2$  - Continued

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TABLE 6.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-006.62 PROPELLER BLADE SECTION ( $\alpha = 0.70$ ) $\rho_0, 75R = 45.2^\circ, \beta_x = 47.35^\circ, B = 2$  - Concluded(g)  $M = 0.65$ .

J $M_\infty$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $\alpha_n$ $\alpha_c$	Pressure coefficient, P														c/b
	2.094	2.141	2.162	2.184	2.209	2.232	2.265	2.297	2.316	2.342	2.365	2.390	2.426	2.453	
0.000	1.238	1.239	1.237	1.232	1.229	1.226	1.225	1.224	1.221	1.218	1.215	1.212	1.211	1.209	1.206
0.025	1.236	1.235	1.234	1.232	1.231	1.230	1.229	1.228	1.227	1.226	1.225	1.224	1.223	1.222	1.221
0.050	1.234	1.233	1.232	1.231	1.230	1.229	1.228	1.227	1.226	1.225	1.224	1.223	1.222	1.221	1.220
0.075	1.232	1.231	1.230	1.229	1.228	1.227	1.226	1.225	1.224	1.223	1.222	1.221	1.220	1.219	1.218
0.100	1.230	1.229	1.228	1.227	1.226	1.225	1.224	1.223	1.222	1.221	1.220	1.219	1.218	1.217	1.216
0.125	1.228	1.227	1.226	1.225	1.224	1.223	1.222	1.221	1.220	1.219	1.218	1.217	1.216	1.215	1.214
0.150	1.226	1.225	1.224	1.223	1.222	1.221	1.220	1.219	1.218	1.217	1.216	1.215	1.214	1.213	1.212
0.175	1.224	1.223	1.222	1.221	1.220	1.219	1.218	1.217	1.216	1.215	1.214	1.213	1.212	1.211	1.210
0.200	1.222	1.221	1.220	1.219	1.218	1.217	1.216	1.215	1.214	1.213	1.212	1.211	1.210	1.209	1.208
0.225	1.220	1.219	1.218	1.217	1.216	1.215	1.214	1.213	1.212	1.211	1.210	1.209	1.208	1.207	1.206
0.250	1.218	1.217	1.216	1.215	1.214	1.213	1.212	1.211	1.210	1.209	1.208	1.207	1.206	1.205	1.204
0.275	1.216	1.215	1.214	1.213	1.212	1.211	1.210	1.209	1.208	1.207	1.206	1.205	1.204	1.203	1.202
0.300	1.214	1.213	1.212	1.211	1.210	1.209	1.208	1.207	1.206	1.205	1.204	1.203	1.202	1.201	1.200
0.325	1.212	1.211	1.210	1.209	1.208	1.207	1.206	1.205	1.204	1.203	1.202	1.201	1.200	1.199	1.198
0.350	1.210	1.209	1.208	1.207	1.206	1.205	1.204	1.203	1.202	1.201	1.200	1.199	1.198	1.197	1.196
0.375	1.208	1.207	1.206	1.205	1.204	1.203	1.202	1.201	1.200	1.199	1.198	1.197	1.196	1.195	1.194
0.400	1.206	1.205	1.204	1.203	1.202	1.201	1.200	1.199	1.198	1.197	1.196	1.195	1.194	1.193	1.192
0.425	1.204	1.203	1.202	1.201	1.200	1.199	1.198	1.197	1.196	1.195	1.194	1.193	1.192	1.191	1.190
0.450	1.202	1.201	1.200	1.199	1.198	1.197	1.196	1.195	1.194	1.193	1.192	1.191	1.190	1.189	1.188
0.475	1.200	1.199	1.198	1.197	1.196	1.195	1.194	1.193	1.192	1.191	1.190	1.189	1.188	1.187	1.186
0.500	1.198	1.197	1.196	1.195	1.194	1.193	1.192	1.191	1.190	1.189	1.188	1.187	1.186	1.185	1.184
0.525	1.196	1.195	1.194	1.193	1.192	1.191	1.190	1.189	1.188	1.187	1.186	1.185	1.184	1.183	1.182
0.550	1.194	1.193	1.192	1.191	1.190	1.189	1.188	1.187	1.186	1.185	1.184	1.183	1.182	1.181	1.180
0.575	1.192	1.191	1.190	1.189	1.188	1.187	1.186	1.185	1.184	1.183	1.182	1.181	1.180	1.179	1.178
0.600	1.190	1.189	1.188	1.187	1.186	1.185	1.184	1.183	1.182	1.181	1.180	1.179	1.178	1.177	1.176
0.625	1.188	1.187	1.186	1.185	1.184	1.183	1.182	1.181	1.180	1.179	1.178	1.177	1.176	1.175	1.174
0.650	1.186	1.185	1.184	1.183	1.182	1.181	1.180	1.179	1.178	1.177	1.176	1.175	1.174	1.173	1.172
0.675	1.184	1.183	1.182	1.181	1.180	1.179	1.178	1.177	1.176	1.175	1.174	1.173	1.172	1.171	1.170
0.700	1.182	1.181	1.180	1.179	1.178	1.177	1.176	1.175	1.174	1.173	1.172	1.171	1.170	1.169	1.168
0.725	1.180	1.179	1.178	1.177	1.176	1.175	1.174	1.173	1.172	1.171	1.170	1.169	1.168	1.167	1.166
0.750	1.178	1.177	1.176	1.175	1.174	1.173	1.172	1.171	1.170	1.169	1.168	1.167	1.166	1.165	1.164
0.775	1.176	1.175	1.174	1.173	1.172	1.171	1.170	1.169	1.168	1.167	1.166	1.165	1.164	1.163	1.162
0.800	1.174	1.173	1.172	1.171	1.170	1.169	1.168	1.167	1.166	1.165	1.164	1.163	1.162	1.161	1.160
0.825	1.172	1.171	1.170	1.169	1.168	1.167	1.166	1.165	1.164	1.163	1.162	1.161	1.160	1.159	1.158
0.850	1.170	1.169	1.168	1.167	1.166	1.165	1.164	1.163	1.162	1.161	1.160	1.159	1.158	1.157	1.156
0.875	1.168	1.167	1.166	1.165	1.164	1.163	1.162	1.161	1.160	1.159	1.158	1.157	1.156	1.155	1.154
0.900	1.166	1.165	1.164	1.163	1.162	1.161	1.160	1.159	1.158	1.157	1.156	1.155	1.154	1.153	1.152
0.925	1.164	1.163	1.162	1.161	1.160	1.159	1.158	1.157	1.156	1.155	1.154	1.153	1.152	1.151	1.150
0.950	1.162	1.161	1.160	1.159	1.158	1.157	1.156	1.155	1.154	1.153	1.152	1.151	1.150	1.149	1.148
0.975	1.160	1.159	1.158	1.157	1.156	1.155	1.154	1.153	1.152	1.151	1.150	1.149	1.148	1.147	1.146
1.000	1.158	1.157	1.156	1.155	1.154	1.153	1.152	1.151	1.150	1.149	1.148	1.147	1.146	1.145	1.144

No orifice.

NACA

TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-005.85 PROPELLER BLADE SECTION ( $\alpha = 0.78$ )  
 $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 44.15^\circ$ ,  $B = 2$

(a)  $N = 1140$  rpm.

J	1.910	2.058	2.175	2.313	2.451	2.372	2.240	2.131	1.998	1.861	1.822
M <sub>x</sub>	.534	.550	.567	.579	.600	.587	.574	.561	.547	.531	.528
α <sub>x</sub>	6.22	4.12	2.56	.80	-.86	.08	1.72	3.14	4.96	6.94	7.52
ΔB	.67	.53	.40	.24	.06	.16	.33	.45	.59	.82	.85
a <sub>1</sub>	1.63	1.13	.71	.30	-.12	.10	.50	.87	1.37	1.82	1.95
c <sub>n</sub>	.5168	.3613	.2277	.0971	-.0384	.0339	.1603	.2781	.4361	.5781	.6187
c <sub>c</sub>	.0225	.0154	.0093	.0040	-.0035	.0021	.0082	.0108	.0202	.0180	.0072
Pressure Coefficient, P											
c/b											
Upper surface	a0.000	1.073	1.078	1.082	1.086	1.093	1.088	1.085	1.081	1.072	1.071
	.025	-1.470	-1.607	-.875	-.521	-.107	-.311	-.700	-1.061	-1.421	-1.186
	.050	-1.474	-1.204	-.635	-.387	-.148	-.269	-.513	-.737	-1.396	-1.196
	.100	-1.394	-.671	-.519	-.352	-.195	-.276	-.439	-.584	-1.315	-1.216
	.200	-.857	-.501	-.428	-.322	-.228	-.278	-.379	-.466	-1.058	-1.148
	.300	-.521	-.442	-.383	-.307	-.245	-.280	-.352	-.408	-.731	-.871
	.400	-.414	-.406	-.364	-.307	-.265	-.292	-.346	-.383	-.508	-.654
	.500	-.363	-.370	-.342	-.299	-.271	-.290	-.330	-.354	-.384	-.458
	.600	-.321	-.332	-.318	-.287	-.275	-.286	-.312	-.325	-.314	-.335
	.700	-.274	-.292	-.289	-.268	-.269	-.275	-.288	-.292	-.262	-.259
Lower surface	.800	-.212	-.228	-.234	-.225	-.239	-.238	-.238	-.230	-.203	-.200
	.900	-.116	-.114	-.118	-.116	-.141	-.135	-.124	-.112	-.124	-.134
	.950	-.060	-.039	-.037	-.039	-.066	-.059	-.045	-.034	-.042	-.097
	.0375	.492	.365	.200	-.004	-.295	-.150	.085	.281	.532	.560
	.075	.330	.212	.073	-.031	-.297	-.192	-.017	.140	.367	.396
	.150	.176	.076	-.031	-.142	-.293	-.223	-.098	.020	.207	.236
	.250	.067	-.012	-.100	-.181	-.293	-.242	-.152	-.058	.094	.120
	.350	-.007	-.074	-.147	-.210	-.299	-.261	-.192	-.112	.015	.037
	.450	-.047	-.105	-.163	-.214	-.284	-.255	-.202	-.135	-.028	-.008
	.550	-.091	-.135	-.187	-.225	-.280	-.257	-.219	-.160	-.075	-.061

aNo orifice.

NACA

TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.85 PROPELLER BLADE SECTION ( $x = 0.78$ ) $\theta_0.75R = 45.2^\circ$ ,  $\beta_x = 44.15^\circ$ ,  $B = 2$  - Continued(b)  $N = 1350$  rpm.

J M <sub>x</sub> α <sub>x</sub> Δφ α <sub>1</sub> c <sub>n</sub> c <sub>m</sub> c/b	Pressure coefficient, P												
	1.839 .623 7.26 1.00 2.02 .6387 .0115	1.972 .646 5.32 1.89 1.63 .5194 .0234	2.066 .655 4.02 .74 1.26 .4039 .0215	2.170 .671 2.62 .55 .81 .2581 .0108	2.286 .689 1.14 .35 .50 .1606 .0066	2.385 .702 -.07 .22 .17 .0542 .0011	2.443 .711 -.76 .08 -.10 -.0342 -.0060	2.419 .707 -.48 .12 .01 -.0048 -.0037	2.340 .695 .47 .26 .29 .0926 .0030	2.244 .680 1.67 .42 .61 .1948 .0085	2.135 .665 3.09 .61 1.00 .3194 .0164	2.005 .647 4.86 .82 1.54 .1897 .0254	1.907 .637 6.26 .98 1.83 .5819 .0202
Upper surface	1.100 -1.312 -1.285 -1.235 -1.054 -1.064 -1.774 -1.533 -1.362 -1.251 -1.174 -1.106 -1.035 -.001	1.108 -1.1498 -1.162 -1.300 -1.786 -1.466 -1.357 -1.300 -1.255 -1.202 -1.132 -1.066 -1.031 -.028	1.111 -2.084 -1.069 -1.603 -1.483 -1.403 -1.364 -1.318 -1.278 -1.230 -1.156 -1.024 -.054	1.118 -.934 -.638 -.502 -.392 -.339 -.318 -.287 -.260 -.224 -.159 -.107 -.027 -.059	1.125 -.602 -.406 -.346 -.297 -.274 -.271 -.238 -.216 -.203 -.157 -.031 -.054	1.130 -.204 -.187 -.197 -.204 -.207 -.222 -.218 -.216 -.203 -.159 -.040 -.041	1.134 -.012 -.066 -.112 -.151 -.172 -.196 -.199 -.204 -.198 -.160 -.046 -.037	1.132 -.096 -.119 -.150 -.176 -.188 -.208 -.210 -.219 -.160 -.043 -.039	1.127 -.348 -.272 -.257 -.244 -.236 -.245 -.235 -.229 -.211 -.163 -.043 -.038	1.121 -.750 -.501 -.405 -.332 -.288 -.264 -.246 -.216 -.156 -.028 -.059	1.115 -1.609 -.559 -.433 -.369 -.340 -.302 -.270 -.232 -.162 -.028 -.055	1.109 -2.403 -2.019 -.688 -.512 -.429 -.381 -.328 -.281 -.228 -.148 -.024 -.048	1.105 -1.440 -1.145 -1.321 -.985 -.652 -.447 -.327 -.257 -.199 -.132 -.050 -.006
Lower surface	.0375 .075 .150 .250 .350 .450 .550 .650 .750 .850 .925 .975 1.000	.573 .411 .255 .144 .065 -.025 -.021 -.073 -.080 -.080 -.033 -.037 .084	.468 .312 .170 .071 .002 -.030 -.066 -.110 -.117 -.095 -.050 -.056 .150	.319 .185 .071 -.008 -.062 -.082 -.109 -.145 -.140 -.109 -.046 -.066 .164	.151 .053 -.028 -.081 -.119 -.127 -.142 -.169 -.154 -.116 -.002 -.105 .163	-.051 -.101 -.135 -.160 -.185 -.167 -.178 -.197 -.167 -.105 -.013 -.102 .144	-.191 -.204 -.207 -.211 -.224 -.198 -.201 -.214 -.178 -.105 -.015 -.097 .138	-.125 -.154 -.173 -.188 -.205 -.182 -.169 -.205 -.172 -.104 -.008 -.095 .135	.023 -.047 -.100 -.134 -.166 -.155 -.189 -.193 -.169 -.112 -.008 -.095 .138	.220 .106 .010 -.052 -.097 -.110 -.130 -.161 -.150 -.114 -.097 .168	.379 .234 .106 .020 -.041 -.064 -.095 -.135 -.135 -.106 -.055 -.060 .143	.545 .382 .280 .165 .080 .035 -.014 -.071 -.093 -.083 -.037 -.052 .120	.605 .440 .280 .165 .080 .035 -.014 -.071 -.093 -.083 -.037 -.052 .120

No orifice.

TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.85 PROPELLER BLADE SECTION ( $\alpha = 0.78$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 44.15^\circ$ ,  $B = 2$  - Continued(c)  $N = 1500$  rpm.

J M <sub>x</sub> α <sub>x</sub> Δδ α <sub>1</sub> α <sub>u</sub> α <sub>c</sub>	Pressure coefficient, P													
	c/b	0.000	0.025	0.050	0.100	0.200	0.300	0.400	0.500	0.600	0.700	0.800	0.900	0.950
Upper surface		1.127 -1.338 -1.326 -1.285 -1.096 -0.857 -0.642 -0.467 -0.340 -0.244 -0.164 -0.095 -0.063	1.131 -2.097 -1.638 -1.783 -1.174 -0.468 -0.310 -0.296 -0.266 -0.217 -0.141 -0.018 0.056	1.139 -1.808 -1.638 -1.489 -0.983 -0.346 -0.400 -0.344 -0.314 -0.229 -0.148 -0.009 0.073	1.145 -1.511 -1.354 -1.182 -0.396 -0.377 -0.358 -0.319 -0.284 -0.237 -0.157 -0.011 0.078	1.153 -0.985 -0.803 -0.493 -0.403 -0.352 -0.336 -0.276 -0.305 -0.278 -0.238 -0.161 -0.013 0.078	1.160 -0.378 -0.303 -0.293 -0.276 -0.266 -0.276 -0.266 -0.255 -0.217 -0.168 0.030 0.061	1.168 -0.008 -0.069 -0.130 -0.178 -0.201 -0.231 -0.236 -0.242 -0.230 -0.176 -0.037 0.054	1.165 -0.171 -0.175 -0.202 -0.221 -0.229 -0.248 -0.247 -0.246 -0.228 -0.171 -0.032 0.060	1.156 -0.715 -0.473 -0.407 -0.345 -0.314 -0.310 -0.299 -0.282 -0.236 -0.166 -0.021 0.071	1.148 -1.204 -1.100 -0.597 -0.423 -0.371 -0.347 -0.313 -0.279 -0.240 -0.160 -0.013 0.077	1.142 -1.611 -1.459 -1.297 -0.993 -0.372 -0.358 -0.312 -0.272 -0.285 -0.157 -0.019 0.074	1.135 -1.987 -1.817 -1.664 -0.953 -0.350 -0.338 -0.312 -0.279 -0.230 -0.150 -0.019 0.059	1.128 -2.220 -2.052 -1.875 -1.059 -0.514 -0.330 -0.307 -0.272 -0.220 -0.145 -0.028 0.040
Lower surface		0.699 0.532 0.364 0.234 0.086 0.024 -0.048 -0.102 -0.062 -0.040 -0.040	0.638 0.473 0.309 0.188 0.102 0.055 0.002 -0.058 -0.077 -0.068 -0.018 0.073 0.143	0.527 0.370 0.221 0.113 0.038 0 -0.044 -0.097 -0.105 -0.084 -0.037 0.069 0.178	0.429 0.283 0.149 0.053 -0.015 -0.045 0.081 -0.123 -0.128 -0.098 -0.046 0.065 0.178	0.285 0.157 0.047 0.030 -0.086 -0.105 -0.130 -0.168 -0.157 -0.120 -0.016 0.093 0.193	0.055 -0.027 -0.091 -0.135 -0.173 -0.162 -0.181 -0.209 -0.177 -0.109 0.020 0.115 0.160	-0.180 -0.209 -0.222 -0.236 -0.255 -0.226 -0.230 -0.246 -0.197 -0.109 0.030 0.134 0.170	-0.055 -0.111 -0.151 -0.180 -0.202 -0.191 -0.202 -0.223 -0.184 -0.104 0.030 0.127 0.162	0.177 -0.020 -0.082 -0.130 -0.139 -0.159 -0.191 -0.171 -0.123 0.004 0.113 0.178	0.350 0.214 0.090 0.005 -0.057 -0.130 -0.222 -0.111 -0.152 -0.145 -0.111 -0.037 0.040 0.188	0.459 0.308 0.168 0.069 -0.003 -0.035 -0.073 -0.122 -0.124 -0.098 -0.049 0.060 0.186	0.580 0.418 0.262 0.145 0.064 0.051 0.027 0.084 -0.097 -0.082 -0.023 0.063 0.150	0.662 0.492 0.326 0.201 0.112 0.040 0.005 -0.055 -0.078 -0.074 -0.074 -0.053 0.053 0.110

aNo orifice.

NACA

TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.85 PROPELLER BLADE SECTION ( $\alpha = 0.78^\circ$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 44.15^\circ$ ,  $B = 2$  - Continued(d)  $N = 1600$  rpm.

J	1.960	2.051	2.145	2.244	2.353	2.463	2.412	2.312	2.208	2.096	2.009	1.926
$M_x$	1.764	1.779	1.796	1.811	1.830	1.851	1.840	1.819	1.801	1.780	1.765	1.753
$\alpha_x$	5.49	4.22	2.95	1.67	1.31	-1.00	-1.40	.81	2.13	3.61	4.80	5.98
$\Delta \alpha$	1.50	1.30	1.04	1.76	.42	.05	.22	.55	.87	1.18	1.40	1.56
$\alpha_1$	2.17	1.78	1.29	.83	.40	-.23	.11	.50	.97	1.51	1.94	2.30
$C_D$	.6929	1.78	1.435	.2045	1.293	-.0429	.0371	.1616	.3129	.4832	.6200	.7323
$C_M$	.0295	.0306	.0239	.0164	.0042	-.0081	-.0004	.0098	.0169	.0282	.0298	.0323
$C_C$												
Pressure coefficient, P												
c/b	Upper surface											
0.000	1.155	1.161	1.169	1.175	1.184	1.194	1.189	1.178	1.170	1.161	1.155	1.150
.025	-1.691	-1.471	-1.144	-.787	-.421	.066	-.113	-.530	-.871	-1.304	-1.564	-1.787
.050	-1.550	-1.337	-1.052	-.753	-.341	-.012	-.137	-.419	-.858	-1.199	-1.434	-1.641
.100	-1.436	-1.237	-1.003	-.713	-.355	-.099	-.196	-.401	-.824	-1.178	-1.326	-1.521
.200	-1.328	-1.157	-.945	-.674	-.318	-.209	-.237	-.360	-.598	-1.046	-1.235	-1.406
.300	-1.251	-1.087	-.905	-.678	-.343	-.256	-.285	-.322	-.361	-.609	-1.125	-1.329
.400	-.950	-.339	-.315	-.353	-.326	-.286	-.300	-.323	-.342	-.288	-.348	-.540
.500	-.287	-.249	-.294	-.323	-.321	-.286	-.300	-.312	-.314	-.271	-.234	-.263
.600	-.187	-.231	-.270	-.292	-.303	-.310	-.302	-.282	-.251	-.218	-.218	-.181
.700	-.164	-.198	-.230	-.247	-.261	-.284	-.294	-.249	-.239	-.188	-.188	-.152
.800	-.107	-.127	-.149	-.159	-.174	-.188	-.180	-.163	-.154	-.137	-.121	-.105
.900	.012	.010	.001	-.004	-.013	-.018	-.015	-.006	-.001	.009	.011	.086
.950	.086	.094	.092	.087	.082	.081	.084	.088	.090	.099	.092	.069
Lower surface												
.0375	.601	.513	.406	.264	.085	-.207	-.070	.136	.321	.460	.548	.629
.075	.442	.362	.263	.140	-.009	-.248	-.132	.036	.192	.314	.395	.468
.150	.288	.218	.133	.033	-.083	-.264	-.178	-.049	.073	.176	.246	.311
.250	.172	.111	.040	-.044	-.138	-.282	-.209	-.108	-.009	.076	.137	.192
.350	.087	.034	-.031	-.104	-.186	-.307	-.247	-.158	-.074	.003	.057	.106
.450	.041	-.004	-.062	-.126	-.196	-.289	-.241	-.170	-.099	.016	.030	.059
.550	.010	-.050	-.099	-.154	-.211	-.284	-.247	-.188	-.129	-.071	-.030	.008
.650	-.068	-.103	-.149	-.201	-.249	-.304	-.276	-.231	-.179	-.122	-.065	-.053
.750	-.092	-.108	-.144	-.184	-.211	-.227	-.217	-.199	-.168	-.123	-.094	-.070
.850	-.064	-.078	-.105	-.125	-.125	-.104	-.111	-.123	-.115	-.087	-.069	-.056
.925	-.011	-.020	-.008	.007	.023	.051	.042	.019	.010	.017	.016	-.001
a.975	.100	.095	.115	.120	.135	.158	.153	.140	.125	.103	.090	.095
a1.000	.175	.185	.205	.189	.194	.200	.200	.210	.200	.178	.165	.165

TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.85 PROPELLER BLADE SECTION ( $\alpha = 0.78^\circ$ ) $\theta_0.75R = 45.2^\circ$ ,  $\theta_x = 44.15^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.57$ .

$\frac{c}{b}$	Pressure coefficient, P															
	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$	$\frac{c}{b}$
0.000	1.169	1.172	1.174	1.176	1.179	1.181	1.183	1.187	1.190	1.194	1.197	1.200	1.202	1.204	1.207	1.210
0.025	1.159	1.162	1.165	1.169	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.050	1.155	1.158	1.162	1.169	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.075	1.151	1.154	1.158	1.166	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.100	1.147	1.150	1.154	1.162	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.125	1.143	1.146	1.150	1.158	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.150	1.139	1.142	1.146	1.154	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.175	1.135	1.138	1.142	1.150	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.200	1.131	1.134	1.138	1.146	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.225	1.127	1.130	1.134	1.142	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.250	1.123	1.126	1.130	1.138	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.275	1.119	1.122	1.126	1.134	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.300	1.115	1.118	1.122	1.130	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.325	1.111	1.114	1.118	1.126	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.350	1.107	1.110	1.114	1.122	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.375	1.103	1.106	1.110	1.118	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.400	1.099	1.102	1.106	1.114	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.425	1.095	1.100	1.104	1.112	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.450	1.091	1.096	1.100	1.108	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.475	1.087	1.092	1.096	1.104	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.500	1.083	1.088	1.092	1.100	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.525	1.079	1.084	1.088	1.096	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.550	1.075	1.080	1.084	1.092	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.575	1.071	1.076	1.080	1.088	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.600	1.067	1.072	1.076	1.084	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.625	1.063	1.068	1.072	1.080	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.650	1.059	1.064	1.068	1.076	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.675	1.055	1.060	1.064	1.072	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.700	1.051	1.056	1.060	1.068	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.725	1.047	1.052	1.056	1.064	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.750	1.043	1.048	1.052	1.060	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.775	1.039	1.044	1.048	1.056	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.800	1.035	1.040	1.044	1.052	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.825	1.031	1.036	1.040	1.048	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.850	1.027	1.032	1.036	1.044	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.875	1.023	1.028	1.032	1.040	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.900	1.019	1.024	1.028	1.036	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.925	1.015	1.020	1.024	1.032	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.950	1.011	1.016	1.020	1.028	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
0.975	1.007	1.012	1.016	1.024	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263
1.000	1.003	1.008	1.012	1.020	1.179	1.188	1.194	1.201	1.207	1.211	1.219	1.229	1.239	1.247	1.257	1.263

No orifice.

NACA



TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-005.85 PROPELLER BLADE SECTION ( $x = 0.78$ )

$\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 44.15^\circ$ ,  $B = 2$  - Continued

(f)  $M = 0.60$ .

j $M_x$ $\alpha$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, p															
	c/b															
0.000	2.117	2.144	2.181	2.207	2.231	2.256	2.285	2.307	2.335	2.371	2.398	2.421	2.452			
0.025	.922	.916	.913	.907	.897	.882	.866	.851	.835	.819	.803	.787	.771	.755	.739	.723
0.050	3.32	2.96	2.47	2.14	1.83	1.51	1.14	.87	.53	.24	-.04	-.31	-.58	-.85	-1.12	-1.39
0.075	1.21	1.18	1.08	1.00	.91	.81	.70	.60	.47	.32	.18	.01	-.15	-.42	-.69	-.96
0.100	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.125	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.150	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.175	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.200	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.225	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.250	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.275	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.300	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.325	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.350	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.375	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.400	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.425	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.450	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.475	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.500	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.525	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.550	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.575	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.600	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.625	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.650	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.675	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.700	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.725	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.750	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.775	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.800	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.825	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.850	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.875	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.900	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.925	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.950	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
0.975	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96
1.000	1.42	1.33	1.22	1.13	1.03	.90	.77	.66	.51	.35	.17	.01	-.15	-.42	-.69	-.96

<sup>a</sup>No orifice.

NACA

TABLE 7.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.85 PROPELLER BLADE SECTION ( $\alpha = 0.78^\circ$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 44.15^\circ$ ,  $B = 2$  - Concluded(g)  $M = 0.65$ .

J	$M_x$	$\Delta b$	$c_l$	$c_m$	$c_c$	2.135	2.170	2.196	2.217	2.242	2.267	2.296	2.316	2.345	2.369	2.406	2.425	2.453
						2.135	2.170	2.196	2.217	2.242	2.267	2.296	2.316	2.345	2.369	2.406	2.425	2.453
0.000	0.000	0.000	0.000	0.000	0.000	1.263	1.262	1.257	1.254	1.251	1.246	1.244	1.240	1.237	1.234	1.230	1.228	1.226
0.025	0.025	0.025	0.025	0.025	0.025	1.273	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.050	0.050	0.050	0.050	0.050	0.050	1.285	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.100	0.100	0.100	0.100	0.100	0.100	1.310	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.200	0.200	0.200	0.200	0.200	0.200	1.352	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.300	0.300	0.300	0.300	0.300	0.300	1.375	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.400	0.400	0.400	0.400	0.400	0.400	1.396	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.500	0.500	0.500	0.500	0.500	0.500	1.426	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.600	0.600	0.600	0.600	0.600	0.600	1.465	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.700	0.700	0.700	0.700	0.700	0.700	1.510	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.800	0.800	0.800	0.800	0.800	0.800	1.572	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.900	0.900	0.900	0.900	0.900	0.900	1.625	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.950	0.950	0.950	0.950	0.950	0.950	1.578	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
0.975	0.975	0.975	0.975	0.975	0.975	1.485	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
1.000	1.000	1.000	1.000	1.000	1.000	1.361	1.245	1.236	1.231	1.224	1.218	1.214	1.210	1.207	1.204	1.200	1.198	1.217
1.150	1.150	1.150	1.150	1.150	1.150	1.244	1.222	1.203	1.175	1.158	1.125	1.100	0.067	0.029	0.006	0.000	0.000	1.217
1.250	1.250	1.250	1.250	1.250	1.250	1.152	1.132	1.115	0.92	0.077	0.048	0.028	0.009	0.000	0.000	0.000	0.000	1.217
1.350	1.350	1.350	1.350	1.350	1.350	0.667	0.049	0.034	0.011	0.002	0.009	0.046	0.069	0.094	0.121	0.150	0.173	0.214
1.450	1.450	1.450	1.450	1.450	1.450	0.024	0.009	0.005	0.007	0.038	0.063	0.077	0.098	0.123	0.148	0.173	0.196	0.229
1.550	1.550	1.550	1.550	1.550	1.550	0.007	0.015	0.028	0.047	0.056	0.080	0.092	0.110	0.136	0.159	0.183	0.196	0.219
1.650	1.650	1.650	1.650	1.650	1.650	0.128	0.138	0.150	0.167	0.175	0.197	0.204	0.220	0.237	0.260	0.278	0.290	0.311
1.750	1.750	1.750	1.750	1.750	1.750	0.219	0.229	0.241	0.259	0.266	0.286	0.292	0.308	0.324	0.344	0.358	0.367	0.379
1.850	1.850	1.850	1.850	1.850	1.850	0.313	0.324	0.336	0.352	0.358	0.378	0.382	0.397	0.409	0.415	0.425	0.435	0.458
1.925	1.925	1.925	1.925	1.925	1.925	0.371	0.385	0.396	0.409	0.410	0.418	0.418	0.418	0.410	0.407	0.408	0.408	0.408
1.975	1.975	1.975	1.975	1.975	1.975	0.400	0.416	0.405	0.410	0.400	0.415	0.410	0.430	0.445	0.452	0.452	0.452	0.452
2.000	2.000	2.000	2.000	2.000	2.000	0.218	0.200	0.135	0.044	0.015	0.021	0.057	0.075	0.098	0.122	0.153	0.187	0.250
2.100	2.100	2.100	2.100	2.100	2.100	0.218	0.200	0.135	0.044	0.015	0.021	0.057	0.075	0.098	0.122	0.153	0.187	0.250

No orifice.

NACA



TABLE 8.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.30 PROPELLER BLADE SECTION ( $x = 0.85$ ) $\theta_{0.75R} = 45.2^\circ$ ,  $\theta_x = 41.90^\circ$ ,  $B = 2$  - Continued(b)  $N = 1350$  rpm.

J M <sub>x</sub> α <sub>x</sub> Δθ α <sub>1</sub> c <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P												
	c/b	1.830 .653 7.48 1.18 2.23 .5981 .0115	1.950 .667 5.76 1.07 1.91 .5155 .0295	2.052 .682 4.36 .85 1.58 .4252 .0216	2.169 .693 2.82 .61 1.07 .2890 .0118	2.269 .707 1.55 .40 .64 .1748 .0069	2.376 .722 .24 .19 .27 .0723 .0031	2.450 .735 -.63 .04 -.04 -.0123 -.0056	2.537 .718 .71 .27 .37 .1006 .0025	2.626 .701 2.08 .50 .83 .2239 .0100	2.722 .686 3.43 .71 1.27 .3412 .0149	2.800 .670 5.07 .96 1.74 .4671 .0238	2.901 .660 6.45 1.16 2.08 .5574 .0246
Upper surface	c/b	1.112 -1.127 -1.137 -1.106 -1.007 -.780 -.561 -.395 -.284 -.198 -.134 -.070 -.033	1.116 -1.901 -1.749 -1.169 -.627 -.431 -.343 -.293 -.260 -.193 -.130 -.037 -.029	1.122 -2.008 -1.857 -.636 -.636 -.462 -.372 -.289 -.275 -.211 -.154 -.043	1.126 -1.471 -.701 -.400 -.319 -.288 -.263 -.261 -.208 -.158 -.045 -.044	1.132 -.814 -.489 -.327 -.310 -.255 -.239 -.226 -.235 -.189 -.145 -.042 -.048	1.138 -.338 -.243 -.198 -.222 -.197 -.197 -.223 -.183 -.153 -.050 -.043	1.143 -.105 -.099 -.107 -.162 -.169 -.169 -.216 -.181 -.156 -.060 -.032	1.136 -.488 -.331 -.236 -.253 -.216 -.213 -.229 -.185 -.151 -.047 -.044	1.130 -1.003 -.579 -.373 -.342 -.275 -.237 -.243 -.192 -.146 -.039 -.049	1.124 -1.723 -1.071 -.491 -.476 -.339 -.301 -.270 -.265 -.206 -.152 -.039 -.048	1.117 -2.154 -2.010 -.754 -.476 -.386 -.338 -.296 -.279 -.212 -.153 -.044 -.035	1.113 -1.421 -1.380 -1.226 -.914 -.616 -.418 -.309 -.246 -.178 -.121 -.048 -.002
	Lower surface	.655 .459 .298 .200 .115 .053 .007 -.046 -.089 -.118 -.100 -.032 -.012	.592 .396 .242 .154 .079 .026 -.014 -.058 -.085 -.096 -.050 -.019 -.108	.494 .307 .168 .096 .031 -.015 -.044 -.081 -.098 -.095 -.034 -.069 -.140	.347 .182 .069 -.020 -.033 -.069 -.088 -.115 -.122 -.104 -.029 -.070 -.150	.194 -.059 -.018 -.040 -.082 -.108 -.118 -.134 -.134 -.105 -.021 -.086 -.155	-.013 -.092 -.125 -.115 -.142 -.153 -.153 -.159 -.148 -.106 -.010 -.099 -.168	-.174 -.205 -.203 -.167 -.184 -.187 -.177 -.176 -.156 -.105 -.086 -.138	.065 -.036 -.087 -.090 -.124 -.139 -.142 -.152 -.144 -.107 -.016 -.079 -.138	.258 .108 .016 -.016 -.065 -.092 -.106 -.126 -.129 -.106 -.082 .150	.419 .241 .114 .056 -.006 -.045 -.068 -.099 -.113 -.101 -.033 .136	.541 .348 .199 .120 .049 -.001 -.032 -.072 -.096 -.096 -.054 .122	.627 .431 .271 .178 .096 .040 -.003 -.053 -.088 -.109 -.077 -.010 .078

<sup>a</sup>No orifice.

NACA

TABLE 8.-- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-005.30 PROPELLER BLADE SECTION ( $\alpha = 0.85$ )

 $\beta_{0.75R} = 45.2^\circ, \beta_x = 41.90^\circ, B = 2 - \text{Continued}$ [illegible]

a. No orifice.

TABLE 8.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.30 PROPELLER BLADE SECTION ( $x = 0.85$ ) $P_0, 7.5R = 45.2^\circ$ ,  $B_x = 41.90^\circ$ ,  $B = 2$  - Continued(a)  $N = 1600$  rpm.

J M <sub>x</sub> α <sub>x</sub> Δθ α <sub>1</sub> c <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P														c/b
	1.980 .807 5.34 1.71 2.45 .6568 .0298	2.070 .819 4.12 1.44 1.99 .5368 .0259	2.157 .835 2.97 1.16 1.52 .4097 .0269	2.266 .852 1.58 .78 .98 .2638 .0147	2.357 .869 .47 .43 .47 .1271 -.0003	2.463 .886 -.79 -.01 -.08 -.0206 -.0156 .0082	2.413 .876 -.20 .20 .20 .0542 -.0082	2.309 .857 1.05 .62 .67 .1810 .0064	2.219 .839 2.17 .95 1.17 .3174 .0193	2.119 .823 3.47 1.29 1.72 .4645 .0256	2.008 .804 4.96 1.64 2.27 .6122 .0265				
Upper surface	0.000	1.174	1.179	1.186	1.195	1.203	1.212	1.207	1.197	1.188	1.181	1.172			
	.025	-1.460	-1.240	-1.002	-1.706	-1.420	-1.006	-1.202	-1.578	-1.771	-1.132	-1.411			
	.050	-1.385	-1.188	-1.948	-1.718	-1.331	-0.933	-1.174	-1.519	-1.799	-1.091	-1.346			
	.100	-1.257	-1.107	-1.907	-1.684	-1.258	-0.877	-1.165	-1.355	-1.680	-0.973	-1.211			
	.200	-1.223	-1.068	-1.914	-1.667	-1.366	-1.194	-1.269	-1.446	-1.767	-1.003	-1.195			
	.300	-1.186	-1.033	-1.858	-1.557	-1.293	-1.204	-1.250	-1.297	-1.397	-0.949	-1.154			
	.400	-1.684	-1.545	-1.269	-1.377	-1.290	-1.246	-1.268	-1.291	-1.238	-1.278	-1.552			
	.500	-1.352	-1.167	-1.184	-1.264	-1.293	-1.267	-1.279	-1.294	-1.246	-1.198	-1.195			
	.600	-1.115	-1.151	-1.218	-1.288	-1.349	-1.356	-1.360	-1.318	-1.275	-1.202	-1.133			
	.700	-1.081	-1.140	-1.185	-1.223	-1.257	-1.327	-1.280	-1.241	-1.215	-1.173	-1.121			
Lower surface	.800	-0.74	-1.113	-1.133	-1.148	-1.172	-1.197	-1.178	-1.164	-1.151	-1.130	-1.103			
	.900	.012	.003	.008	.009	.027	.035	.030	.021	.015	.011	.003			
	.950	.090	.089	.088	.091	.079	.073	.078	.082	.084	.085	.084			
	.0375	.598	.511	.414	.273	.067	-.198	-.047	.158	.327	.464	.571			
	.075	.412	.331	.244	.124	-.050	-.274	-.142	.024	.167	.290	.386			
	.150	.264	.194	.120	.019	-.119	-.309	-.200	-.062	.057	.158	.239			
	.250	.179	.122	.061	-.018	-.121	-.244	-.174	-.080	.011	.092	.158			
	.350	.096	.042	-.009	-.080	-.172	-.271	-.213	-.134	-.056	.019	.077			
	.450	.038	-.011	-.059	-.123	-.203	-.281	-.240	-.170	-.099	-.033	.019			
	.550	-.004	-.047	-.090	-.147	-.217	-.284	-.248	-.187	-.126	-.066	-.019			
No orifice.	.650	-.050	-.086	-.125	-.170	-.222	-.282	-.240	-.182	-.152	-.112	-.086			
	.750	-.075	-.101	-.131	-.162	-.192	-.199	-.194	-.182	-.152	-.112	-.086			
	.850	-.066	-.078	-.096	-.111	-.111	-.092	-.100	-.115	-.107	-.083	-.072			
	a <sub>1</sub> .975	-.011	.015	.008	.006	.021	.048	.037	.132	.110	.113	.121			
a <sub>1</sub> .000	.198	.202	.211	.219	.190	.235	.237	.206	.179	.193	.189				

No orifice.

NACA

TABLE 8.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-005.30 PROPELLER BLADE SECTION ( $\alpha = 0.85$ )

$\theta_0.75R = 45.2^\circ$ ,  $\theta_x = 41.90^\circ$ ,  $B = 2$  - Continued

(e)  $M = 0.57$ .

J $M_\infty$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P															
	c/b								Upper surface							
0.000	1.185	1.189	1.191	1.194	1.196	1.201	1.204	1.206	1.209	1.214	1.216	1.219	1.222	1.225	1.228	1.228
0.025	0.018	-0.065	-0.204	-0.339	-0.471	-0.552	-0.600	-0.617	-0.627	-0.636	-0.650	-0.663	-0.672	-0.678	-0.683	-0.687
0.050	-0.011	-0.089	-0.167	-0.257	-0.361	-0.479	-0.602	-0.645	-0.659	-0.668	-0.674	-0.678	-0.683	-0.687	-0.690	-0.693
0.100	-0.057	-0.082	-0.143	-0.193	-0.246	-0.320	-0.495	-0.546	-0.579	-0.598	-0.608	-0.613	-0.617	-0.620	-0.623	-0.626
0.200	-0.158	-0.188	-0.233	-0.285	-0.343	-0.450	-0.558	-0.626	-0.653	-0.674	-0.695	-0.709	-0.723	-0.734	-0.737	-0.740
0.300	-0.160	-0.183	-0.215	-0.245	-0.274	-0.311	-0.481	-0.560	-0.600	-0.630	-0.658	-0.676	-0.696	-0.712	-0.716	-0.720
0.400	-0.188	-0.209	-0.233	-0.256	-0.279	-0.288	-0.355	-0.543	-0.598	-0.619	-0.643	-0.660	-0.676	-0.695	-0.700	-0.707
0.500	-0.204	-0.222	-0.239	-0.257	-0.278	-0.292	-0.355	-0.543	-0.605	-0.641	-0.663	-0.678	-0.693	-0.705	-0.707	-0.713
0.600	-0.252	-0.265	-0.279	-0.292	-0.312	-0.338	-0.313	-0.241	-0.242	-0.133	-0.133	-0.133	-0.133	-0.133	-0.133	-0.133
0.700	-0.214	-0.222	-0.228	-0.235	-0.242	-0.247	-0.245	-0.208	-0.148	-0.061	-0.051	-0.051	-0.051	-0.051	-0.051	-0.051
0.800	-0.174	-0.176	-0.174	-0.171	-0.168	-0.161	-0.156	-0.137	-0.101	-0.042	-0.042	-0.042	-0.042	-0.042	-0.042	-0.042
0.900	-0.054	-0.049	-0.040	-0.033	-0.026	-0.017	-0.010	-0.002	-0.020	-0.042	-0.059	-0.087	-0.114	-0.144	-0.175	-0.204
0.950	0.052	0.058	0.066	0.075	0.081	0.084	0.092	0.099	0.110	0.123	0.126	0.126	0.126	0.126	0.126	0.126
0.075	-0.282	-0.190	-0.073	0.008	0.080	0.150	0.229	0.275	0.310	0.344	0.381	0.407	0.439	0.473	0.489	0.489
0.075	-0.302	-0.238	-0.151	-0.090	-0.036	0.030	0.088	0.126	0.157	0.189	0.222	0.264	0.276	0.306	0.323	0.323
0.150	-0.281	-0.243	-0.185	-0.143	-0.103	0.062	0.102	0.122	0.149	0.174	0.202	0.222	0.242	0.262	0.276	0.276
0.250	-0.226	-0.204	-0.168	-0.138	-0.113	0.084	0.046	-0.022	0.048	0.075	0.102	0.122	0.142	0.162	0.174	0.174
0.350	-0.237	-0.222	-0.195	-0.176	-0.160	0.137	0.109	0.088	-0.071	-0.051	-0.030	-0.016	0.004	0.024	0.036	0.036
0.450	-0.237	-0.227	-0.210	-0.199	-0.189	0.176	0.132	0.108	-0.125	-0.109	-0.090	-0.079	-0.064	-0.043	-0.033	-0.033
0.550	-0.224	-0.220	-0.207	-0.202	-0.200	0.194	0.182	0.174	-0.164	-0.151	-0.135	-0.129	-0.114	-0.100	-0.090	-0.090
0.650	-0.212	-0.210	-0.204	-0.205	-0.207	0.209	0.205	0.204	-0.203	-0.196	-0.186	-0.187	-0.176	-0.167	-0.160	-0.160
0.750	-0.177	-0.176	-0.177	-0.183	-0.183	0.188	0.192	0.196	-0.200	-0.205	-0.207	-0.230	-0.234	-0.235	-0.231	-0.231
0.850	-0.098	-0.099	-0.100	-0.104	-0.110	0.115	0.121	0.123	-0.125	-0.128	-0.135	-0.169	-0.187	-0.209	-0.213	-0.213
0.925	0.027	0.026	0.025	0.022	0.017	0.011	0.008	0.010	0.011	0.009	-0.002	-0.038	-0.087	-0.150	-0.181	-0.181
0.975	0.140	0.144	0.145	0.147	0.135	0.125	0.128	0.140	0.136	0.140	0.125	0.080	0.005	-0.068	-0.105	-0.105
0.990	0.205	0.215	0.209	0.223	0.215	0.190	0.204	0.215	0.209	0.215	0.200	0.150	0.052	-0.031	-0.075	-0.075

No orifice.

TABLE 8.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.30 PROPELLER BLADE SECTION ( $\alpha = 0.85$ ) $P_{0.75R} = 45.2^\circ$ ,  $\beta_x = 41.90^\circ$ ,  $B = 2$  - Continued(f)  $M = 0.60$ .

J	2.471	2.445	2.414	2.397	2.368	2.338	2.308	2.281	2.254	2.221	2.194	2.165	2.145	2.127	2.105
M <sub>x</sub>	.888	.896	.899	.906	.912	.918	.924	.931	.937	.944	.948	.955	.960	.968	.974
α <sub>x</sub> '	-.88	-.58	-.11	-.01	.33	.70	1.06	1.40	1.73	2.15	2.49	2.87	3.13	3.36	3.65
Δδ	.05	.09	.15	.19	.28	.43	.62	.78	.93	1.09	1.29	1.27	1.30	1.32	1.34
α <sub>1</sub>	-.11	.02	.19	.31	.47	.63	.76	.92	1.04	1.15	1.20	1.40	1.49	1.61	1.74
c <sub>n</sub>	-.0303	.0045	.0516	.0852	.1271	.1697	.2065	.2497	.2800	.3123	.3497	.3787	.4045	.4374	.4710
c <sub>m</sub>	-.0192	-.0151	-.0118	-.0126	-.0088	-.0108	-.0092	-.0097	-.0031	.0008	.0008	-.0064	-.0159	-.0251	-.0303
c <sub>c</sub>	.0085	.0092	.0093	.0096	.0107	.0105	.0122	.0121	.0142	.0169	.0189	.0202	.0217	.0236	.0254
Pressure coefficient, P															
c/b															
Upper surface	0.000	1.212	1.217	1.219	1.222	1.225	1.228	1.232	1.235	1.239	1.243	1.245	1.249	1.252	1.257
	.025	.031	-.056	-.157	-.219	-.299	-.375	-.400	-.412	-.422	-.439	-.471	-.476	-.482	-.486
	.050	-.001	-.065	-.134	-.176	-.233	-.300	-.354	-.401	-.429	-.461	-.499	-.505	-.513	-.511
	.100	-.051	-.078	-.113	-.134	-.169	-.212	-.278	-.330	-.374	-.409	-.451	-.464	-.474	-.480
	.200	-.174	-.217	-.270	-.301	-.341	-.374	-.388	-.416	-.455	-.498	-.540	-.550	-.561	-.565
	.300	-.188	-.221	-.252	-.265	-.304	-.351	-.394	-.410	-.433	-.467	-.512	-.523	-.541	-.549
	.400	-.236	-.269	-.295	-.295	-.312	-.362	-.392	-.425	-.454	-.480	-.512	-.525	-.538	-.543
	.500	-.259	-.270	-.317	-.333	-.342	-.371	-.416	-.448	-.479	-.511	-.542	-.553	-.564	-.564
	.600	-.350	-.360	-.356	-.396	-.438	-.444	-.464	-.509	-.543	-.583	-.617	-.627	-.637	-.636
	.700	-.340	-.387	-.388	-.398	-.411	-.456	-.503	-.517	-.551	-.608	-.646	-.657	-.668	-.668
Lower surface	0.000	-.216	-.217	-.222	-.251	-.277	-.308	-.281	-.318	-.281	-.163	-.149	-.202	-.279	-.377
	.025	-.036	-.029	-.013	-.010	-.021	-.021	-.041	-.040	-.026	-.025	-.072	-.118	-.160	-.189
	.050	-.071	-.082	-.099	-.112	-.118	-.124	-.134	-.117	-.089	-.011	-.045	-.100	-.144	-.171
	.075	-.244	-.147	-.050	-.010	-.065	-.124	-.179	-.231	-.268	-.321	-.364	-.391	-.419	-.448
	.100	-.306	-.230	-.148	-.094	-.048	0	-.050	-.094	-.129	-.174	-.213	-.237	-.262	-.290
	.150	-.315	-.261	-.197	-.156	-.120	-.081	-.038	0	-.027	-.066	-.097	-.119	-.140	-.164
	.250	-.257	-.230	-.186	-.155	-.125	-.099	-.065	-.033	-.009	-.022	-.047	-.064	-.082	-.107
	.350	-.286	-.261	-.226	-.201	-.181	-.158	-.129	-.101	-.080	-.054	-.030	-.015	-.001	-.024
	.450	-.294	-.281	-.258	-.239	-.225	-.205	-.181	-.157	-.141	-.116	-.096	-.082	-.068	-.046
	.550	-.280	-.286	-.276	-.262	-.251	-.235	-.214	-.192	-.176	-.158	-.141	-.128	-.116	-.096
.650	-.262	-.283	-.304	-.306	-.304	-.293	-.278	-.260	-.247	-.229	-.211	-.203	-.193	-.173	
.750	-.196	-.205	-.221	-.246	-.295	-.322	-.335	-.328	-.320	-.307	-.293	-.286	-.277	-.260	
.850	-.083	-.090	-.093	-.087	-.094	-.106	-.126	-.196	-.380	-.436	-.425	-.423	-.416	-.401	
a <sub>1</sub> .975	.057	.051	.047	.055	.051	.043	.039	.020	-.016	-.017	-.016	-.016	-.016	-.016	-.016
a <sub>1</sub> .000	.180	.200	.216	.239	.203	.195	.144	.116	.075	.020	.050	-.103	-.150	-.190	-.250
															-.178

No orifice.

NACA



TABLE 8.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.30 PROPELLER BLADE SECTION ( $\alpha = 0.85$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 41.90^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.65$ .

J $M_\infty$ $\alpha_x$ $\Delta\delta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	2.452	2.433	2.414	2.386	2.362	2.339	2.313	2.288	2.253	2.239	2.221	2.200	2.173	2.160
	.955	.962	.966	.973	.978	.984	.988	.994	1.003	1.007	1.017	1.022	1.028	1.035
	-.66	-.44	-.21	.12	.41	.68	1.00	1.31	1.75	1.92	2.15	2.41	2.76	2.93
	.18	.23	.28	.37	.46	.54	.66	.75	.85	.88	.92	.95	.99	1.01
	-.23	-.04	.04	.24	.41	.53	.68	.83	1.03	1.12	1.23	1.33	1.41	1.50
	-.0626	-.0116	.0123	.0652	.1116	.1426	.1839	.2252	.2768	.3019	.3342	.3594	.3813	.4052
	-.0093	-.0059	-.0031	-.0008	-.0059	-.0103	-.0152	-.0202	-.0324	-.0370	-.0447	-.0505	-.0523	-.0593
	.0189	.0215	.0238	.0269	.0279	.0289	.0289	.0294	.0327	.0341	.0350	.0357	.0361	.0358
Pressure coefficient, P														
c/b														
Upper surface	0.000	1.249	1.253	1.255	1.262	1.265	1.268	1.271	1.277	1.279	1.285	1.288	1.292	1.297
	.025	.066	-.011	.065	-.200	-.224	-.258	-.264	-.275	-.279	-.279	-.284	-.290	-.295
	.050	.042	-.013	.053	-.148	-.164	-.217	-.241	-.279	-.295	-.303	-.312	-.321	-.330
	.100	.013	-.015	.036	-.097	-.116	-.164	-.236	-.239	-.261	-.272	-.281	-.290	-.297
	.200	-.147	-.190	-.216	-.262	-.268	-.287	-.303	-.339	-.358	-.365	-.376	-.384	-.392
	.300	-.159	-.185	-.209	-.264	-.274	-.301	-.315	-.337	-.349	-.356	-.368	-.378	-.387
	.400	-.205	-.221	-.237	-.288	-.294	-.316	-.334	-.361	-.371	-.375	-.381	-.385	-.393
	.500	-.251	-.265	-.276	-.321	-.328	-.355	-.364	-.390	-.402	-.407	-.412	-.416	-.421
	.600	-.334	-.366	-.373	-.394	-.405	-.429	-.445	-.468	-.479	-.484	-.485	-.491	-.496
	.700	-.384	-.416	-.426	-.440	-.440	-.458	-.474	-.501	-.512	-.516	-.522	-.526	-.531
	.800	-.425	-.442	-.450	-.495	-.497	-.507	-.517	-.541	-.553	-.559	-.568	-.570	-.576
	.900	-.312	-.354	-.417	-.517	-.528	-.529	-.545	-.598	-.608	-.612	-.617	-.625	-.630
	.950	.027	-.011	-.040	-.141	-.192	-.201	-.244	-.455	-.539	-.620	-.635	-.637	-.645
	.0375	-.127	-.047	.008	.126	.160	.210	.246	.297	.324	.362	.390	.417	.439
Lower surface	.075	-.207	-.149	-.106	.004	.035	.080	.110	.156	.181	.215	.242	.266	.287
	.150	-.269	-.204	-.168	-.079	-.053	-.014	.012	.051	.073	.103	.127	.149	.168
	.250	-.245	-.193	-.159	-.091	-.069	-.038	-.017	.015	.035	.061	.082	.102	.118
	.350	-.253	-.224	-.203	-.142	-.124	-.098	-.079	-.053	-.037	-.013	.005	.023	.037
	.450	-.304	-.273	-.251	-.198	-.180	-.153	-.136	-.111	-.094	-.071	-.054	-.036	-.018
	.550	-.334	-.307	-.291	-.241	-.202	-.200	-.186	-.163	-.148	-.126	-.109	-.093	-.075
	.650	-.383	-.360	-.341	-.294	-.278	-.257	-.244	-.221	-.208	-.186	-.171	-.157	-.144
	.750	-.431	-.417	-.406	-.366	-.350	-.332	-.320	-.303	-.290	-.272	-.259	-.245	-.232
	.850	-.473	-.517	-.511	-.480	-.467	-.452	-.441	-.427	-.417	-.400	-.386	-.373	-.360
	.925	.005	-.082	-.225	-.533	-.532	-.521	-.511	-.501	-.491	-.475	-.461	-.448	-.434
	.975	.228	.152	.062	-.050	-.088	-.140	-.175	-.390	-.523	-.516	-.523	-.523	-.523
	1.000	.295	.209	.115	.020	-.080	-.101	-.142	-.359	-.442	-.531	-.569	-.618	-.540

a. No orifice.

NACA

TABLE 8.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-005.30 PROPELLER BLADE SECTION ( $\alpha = 0.85^\circ$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 41.90^\circ$ ,  $B = 1$  - Concluded(h) One-blade propeller;  $M = 0.56$ .

J	2.333	2.270	2.201	2.155	2.123	2.087	2.062	2.032	2.003	1.976	1.955	1.937	1.912	1.892
M <sub>x</sub>	.851	.864	.880	.890	.898	.908	.915	.923	.932	.938	.945	.950	.958	.965
α <sub>x</sub>	.75	1.53	2.40	2.99	3.42	3.88	4.22	4.63	5.02	5.39	5.69	5.93	6.29	6.57
Δβ	.58	.86	1.13	1.29	1.39	1.49	1.55	1.62	1.67	1.72	1.74	1.76	1.78	1.78
α <sub>1</sub>	.34	.61	.98	1.24	1.40	1.47	1.56	1.62	1.72	1.81	1.94	2.03	2.09	2.22
α <sub>n</sub>				.4019	.4555	.4794	.5055	.5245	.5555	.5865	.6348	.6613	.6819	.7258
α <sub>m</sub>			.0127	.0012	-.0087	-.0093	-.0066	-.0080	-.0128	-.0233	-.0380	-.0469	-.0572	-.0741
α <sub>c</sub>				.0053	.0081	.0125	.0147	.0172	.0190	.0199	.0212	.0223	.0234	.0255
Pressure coefficient, P														
c/b														
Upper surface	0.000	1.194	1.200	1.214	1.218	1.223	1.226	1.230	1.235	1.239	1.243	1.246	1.250	1.254
	.025	-.152	-.304	-.427	-.553	-.597	-.628	-.662	-.682	-.693	-.703	-.707	-.717	-.739
	.050	-.338	-.548	-.633	-.630	-.679	-.723	-.752	-.764	-.774	-.778	-.779	-.787	-.786
	.100	-.298	-.502	-.629	-.651	-.667	-.686	-.704	-.715	-.724	-.729	-.735	-.738	-.729
	.200	-.284	-.490	-.622	-.686	-.699	-.712	-.725	-.729	-.733	-.736	-.738	-.738	-.733
	.300	-.275	-.377	-.640	-.672	-.689	-.706	-.722	-.726	-.731	-.732	-.728	-.729	-.724
	.400	-.250	-.259	-.624	-.645	-.666	-.682	-.702	-.710	-.718	-.719	-.714	-.714	-.711
	.500	-.284	-.293	-.663	-.689	-.700	-.713	-.726	-.730	-.735	-.736	-.731	-.733	-.731
	.600	-.296	-.316	-.707	-.739	-.748	-.761	-.773	-.771	-.773	-.771	-.766	-.768	-.767
	.700	-.261	-.253	-.197	-.183	-.268	-.276	-.296	-.354	-.442	-.616	-.738	-.805	-.806
Lower surface	0.000	1.164	1.143	1.042	1.114	1.172	1.194	1.222	1.245	1.271	1.295	1.314	1.330	1.369
	.025	-.006	-.006	-.066	-.004	-.103	-.141	-.184	-.220	-.250	-.271	-.291	-.330	-.369
	.050	-.032	.015	.042	-.004	-.172	-.194	-.222	-.245	-.271	-.295	-.314	-.330	-.369
	.100	.074	.115	.138	.067	-.052	-.106	-.162	-.203	-.235	-.261	-.276	-.308	-.337
	.0375	-.008	.157	.344	.388	.428	.461	.500	.535	.558	.578	.601	.618	.638
	.075	-.028	.093	.253	.290	.328	.357	.391	.424	.443	.464	.483	.500	.517
	.150	-.096	-.002	.131	.163	.196	.223	.251	.280	.299	.318	.337	.353	.370
	.250	-.131	-.061	.046	.073	.102	.123	.151	.177	.193	.212	.230	.244	.258
	.350	-.166	-.116	-.028	-.004	.021	.041	.065	.090	.104	.119	.138	.150	.164
	.450	-.173	-.137	-.082	-.063	-.041	-.024	-.003	.019	.031	.048	.064	.075	.090

aNo orifice.

NACA

TABLE 9.-- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-004.80 PROPELLER BLADE SECTION ( $\alpha = 0.90$ )

$\beta_0, 75R = 45.2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$

(a)  $N = 1140$  rpm.

J M <sub>x</sub> α <sub>x</sub> Δβ α <sub>1</sub> α <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P																
	c/b																
Upper surface	1.110	1.106	1.105	1.100	1.098	1.095	1.093	1.090	1.089	1.089	1.092	1.094	1.097	1.099	1.102	1.106	1.109
	.034	-.214	-.435	-.741	-.888	-.951	-.974	-.989	-.999	-.999	-.999	-.999	-.999	-.999	-.999	-.999	-.999
	-.043	-.195	-.319	-.491	-.640	-.762	-.837	-.890	-.922	-.942	-.952	-.958	-.961	-.963	-.965	-.966	-.967
	-.065	-.160	-.239	-.340	-.430	-.502	-.557	-.600	-.633	-.656	-.670	-.677	-.681	-.683	-.685	-.686	-.687
	-.090	-.149	-.195	-.258	-.310	-.353	-.404	-.440	-.468	-.488	-.500	-.505	-.508	-.510	-.511	-.512	-.513
	-.127	-.162	-.194	-.239	-.273	-.303	-.339	-.363	-.384	-.400	-.412	-.420	-.425	-.428	-.430	-.431	-.432
	-.142	-.165	-.187	-.220	-.243	-.262	-.275	-.282	-.286	-.288	-.289	-.290	-.291	-.291	-.291	-.291	-.291
	-.172	-.188	-.204	-.227	-.242	-.253	-.259	-.262	-.263	-.264	-.264	-.264	-.264	-.264	-.264	-.264	-.264
	-.175	-.195	-.210	-.230	-.242	-.253	-.259	-.262	-.263	-.264	-.264	-.264	-.264	-.264	-.264	-.264	-.264
	-.154	-.159	-.165	-.176	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182
Lower surface	1.110	1.106	1.105	1.100	1.098	1.095	1.093	1.090	1.089	1.089	1.092	1.094	1.097	1.099	1.102	1.106	1.109
	.034	-.214	-.435	-.741	-.888	-.951	-.974	-.989	-.999	-.999	-.999	-.999	-.999	-.999	-.999	-.999	-.999
	-.043	-.195	-.319	-.491	-.640	-.762	-.837	-.890	-.922	-.942	-.952	-.958	-.961	-.963	-.965	-.966	-.967
	-.065	-.160	-.239	-.340	-.430	-.502	-.557	-.600	-.633	-.656	-.670	-.677	-.681	-.683	-.685	-.686	-.687
	-.090	-.149	-.195	-.258	-.310	-.353	-.404	-.440	-.468	-.488	-.500	-.505	-.508	-.510	-.511	-.512	-.513
	-.127	-.162	-.194	-.239	-.273	-.303	-.339	-.363	-.384	-.400	-.412	-.420	-.425	-.428	-.430	-.431	-.432
	-.142	-.165	-.187	-.220	-.243	-.262	-.275	-.282	-.286	-.288	-.289	-.290	-.291	-.291	-.291	-.291	-.291
	-.172	-.188	-.204	-.227	-.242	-.253	-.259	-.262	-.263	-.264	-.264	-.264	-.264	-.264	-.264	-.264	-.264
	-.175	-.195	-.210	-.230	-.242	-.253	-.259	-.262	-.263	-.264	-.264	-.264	-.264	-.264	-.264	-.264	-.264
	-.154	-.159	-.165	-.176	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182	-.182

No orifice.  
baffled value.

NACA

TABLE 9.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.80 PROPELLER BLADE SECTION ( $x = 0.90$ ) $\theta_0.75R = 45.2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$  - Continued(c)  $N = 1350$  rpm.

J	M <sub>x</sub>	α <sub>x</sub> <sup>*</sup>	Δθ	α <sub>1</sub>	c <sub>n</sub>	c <sub>m</sub>	c <sub>c</sub>	Pressure coefficient, P																		
								2.484	2.397	2.313	2.233	2.150	2.062	1.990	1.846	1.906	2.026	2.121	2.194	2.266	2.358	2.443				
Upper surface								0.000	1.163	1.155	1.151	1.146	1.141	1.137	1.134	1.127	1.131	1.135	1.140	1.144	1.148	1.153	1.160			
	0.025	-0.079	-0.188	-0.201	-0.404	-0.584	-0.741	-1.341	-1.908	-1.629	-2.108	-1.803	-1.509	-1.038	-0.763	-0.515	-0.348	-0.291	-0.266	-0.249	-0.284	-0.316	-0.342	-0.363	-0.384	-0.404
	0.050	-0.18	-0.201	-0.404	-0.584	-0.741	-0.908	-1.341	-1.908	-1.629	-2.108	-1.803	-1.509	-1.038	-0.763	-0.515	-0.348	-0.291	-0.266	-0.249	-0.284	-0.316	-0.342	-0.363	-0.384	-0.404
	0.100	-0.92	-0.170	-0.286	-0.380	-0.414	-0.656	-0.350	-0.334	-0.839	-0.403	-0.329	-0.351	-0.419	-0.342	-0.263	-0.197	-0.204	-0.229	-0.243	-0.258	-0.277	-0.299	-0.329	-0.351	-0.384
	0.200	-0.93	-0.166	-0.229	-0.289	-0.340	-0.350	-0.350	-0.334	-0.839	-0.403	-0.329	-0.351	-0.419	-0.342	-0.263	-0.197	-0.204	-0.229	-0.243	-0.258	-0.277	-0.299	-0.329	-0.351	-0.384
	0.300	-1.34	-0.183	-0.244	-0.268	-0.303	-0.325	-0.325	-0.298	-0.371	-0.319	-0.297	-0.315	-0.284	-0.258	-0.239	-0.217	-0.198	-0.186	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177
	0.400	-1.50	-0.185	-0.212	-0.244	-0.268	-0.289	-0.289	-0.298	-0.371	-0.319	-0.297	-0.315	-0.284	-0.258	-0.239	-0.217	-0.198	-0.186	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177
	0.500	-1.88	-0.214	-0.231	-0.253	-0.268	-0.283	-0.288	-0.288	-0.287	-0.299	-0.289	-0.277	-0.258	-0.239	-0.217	-0.198	-0.186	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177
	0.600	-1.95	-0.213	-0.220	-0.240	-0.244	-0.255	-0.255	-0.255	-0.230	-0.257	-0.252	-0.251	-0.239	-0.217	-0.198	-0.186	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177
	0.700	-1.71	-0.183	-0.186	-0.198	-0.200	-0.203	-0.202	-0.202	-0.173	-0.200	-0.204	-0.202	-0.197	-0.190	-0.186	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177	-0.177
	0.800	-1.29	-1.34	-1.31	-1.38	-1.34	-1.35	-1.32	-1.32	-1.11	-1.27	-1.37	-1.36	-1.35	-1.30	-1.34	-1.33	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
	0.900	-0.62	-0.62	-0.53	-0.56	-0.49	-0.48	-0.45	-0.45	-0.47	-0.46	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45
	0.950	-0.04	-0.04	-0.14	-0.13	-0.20	-0.19	-0.16	-0.08	-0.09	-0.15	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18	-0.18
	1.000	-0.321	-0.121	-0.058	-0.171	-0.308	-0.406	-0.483	-0.589	-0.549	-0.439	-0.342	-0.241	-0.134	-0.039	-0.221	-0.221	-0.221	-0.221	-0.221	-0.221	-0.221	-0.221	-0.221	-0.221	-0.221
	0.075	-0.293	-0.157	-0.028	-0.057	-0.168	-0.252	-0.321	-0.416	-0.378	-0.282	-0.198	-0.114	-0.032	-0.100	-0.226	-0.226	-0.226	-0.226	-0.226	-0.226	-0.226	-0.226	-0.226	-0.226	-0.226
	0.150	-0.228	-0.147	-0.059	-0.001	-0.083	-0.145	-0.201	-0.278	-0.247	-0.169	-0.104	-0.042	-0.018	-0.109	-0.186	-0.186	-0.186	-0.186	-0.186	-0.186	-0.186	-0.186	-0.186	-0.186	-0.186
	0.205	-0.205	-0.149	-0.088	-0.050	-0.012	-0.061	-0.106	-0.169	-0.141	-0.080	-0.029	-0.019	-0.058	-0.122	-0.175	-0.175	-0.175	-0.175	-0.175	-0.175	-0.175	-0.175	-0.175	-0.175	-0.175
	0.350	-0.171	-0.125	-0.096	-0.062	-0.047	-0.009	-0.028	-0.077	-0.056	-0.006	-0.035	-0.069	-0.102	-0.151	-0.191	-0.191	-0.191	-0.191	-0.191	-0.191	-0.191	-0.191	-0.191	-0.191	-0.191
	0.450	-0.218	-0.188	-0.156	-0.135	-0.093	-0.062	-0.032	-0.005	-0.011	-0.050	-0.083	-0.112	-0.138	-0.174	-0.204	-0.204	-0.204	-0.204	-0.204	-0.204	-0.204	-0.204	-0.204	-0.204	-0.204
	0.550	-0.195	-0.176	-0.150	-0.136	-0.104	-0.077	-0.052	-0.024	-0.037	-0.068	-0.095	-0.119	-0.138	-0.166	-0.188	-0.188	-0.188	-0.188	-0.188	-0.188	-0.188	-0.188	-0.188	-0.188	-0.188
	0.650	-0.188	-0.176	-0.158	-0.152	-0.126	-0.107	-0.086	-0.070	-0.075	-0.099	-0.120	-0.136	-0.151	-0.169	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183	-0.183
	0.750	-0.147	-0.145	-0.137	-0.134	-0.115	-0.104	-0.089	-0.086	-0.085	-0.099	-0.113	-0.123	-0.131	-0.143	-0.147	-0.147	-0.147	-0.147	-0.147	-0.147	-0.147	-0.147	-0.147	-0.147	-0.147
	0.850	-0.082	-0.088	-0.090	-0.096	-0.086	-0.081	-0.073	-0.091	-0.076	-0.081	-0.087	-0.089	-0.090	-0.090	-0.085	-0.085	-0.085	-0.085	-0.085	-0.085	-0.085	-0.085	-0.085	-0.085	-0.085
	0.925	-0.32	-0.021	-0.010	-0.002	-0.001	-0.003	-0.004	-0.044	-0.044	-0.006	-0.006	-0.003	-0.006	-0.006	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015
	0.975	-0.124	-0.122	-0.095	-0.111	-0.100	-0.111	-0.069	-0.018	-0.053	-0.070	-0.072	-0.102	-0.090	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087	-0.087
	1.000	-0.180	-0.183	-0.137	-0.260	-0.158	-0.180	-0.122	-0.055	-0.090	-0.120	-0.120	-0.160	-0.135	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123	-0.123
																						</				

<sup>a</sup> No orifice.

NACA

TABLE 9.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.80 PROPELLER BLADE SECTION ( $x = 0.90$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$  - Continued(c)  $N = 1500$  rpm.

J	1.835	1.928	2.009	2.121	2.204	2.292	2.381	2.463	2.432	2.335	2.255	2.159	2.074	1.972	1.877
M <sub>x</sub>	1.760	1.769	1.782	1.798	1.810	1.821	1.838	1.850	1.847	1.828	1.815	1.801	1.788	1.776	1.761
α <sub>x</sub>	7.02	5.71	4.60	3.12	2.06	.97	-1.0	-1.06	-7.0	.45	1.43	2.63	3.74	5.11	6.42
Δβ	1.80	1.82	1.54	1.18	.90	.61	.30	0	.11	.46	.74	1.05	1.33	1.68	1.83
α <sub>1</sub>	2.69	2.54	2.18	1.63	1.13	.69	.31	-1.15	.01	.48	.85	1.31	1.91	2.36	2.74
α <sub>n</sub>	.5961	.5679	.4845	.3613	.2923	.1542	.0700	-.0339	.0016	.1077	.1890	.2915	.4244	.5232	.6097
α <sub>m</sub>	.0351	.0333	.0305	.0197	.0116	.0079	-.0005	-.0109	-.0082	.0029	.0082	.0133	.0247	.0333	.0352
α <sub>c</sub>															
Pressure coefficient, p															
c/b															
Upper surface	0.000	1.153	1.157	1.163	1.170	1.175	1.180	1.188	1.194	1.192	1.183	1.177	1.165	1.160	1.154
	0.025	1.1817	1.1674	1.1480	1.1168	1.0815	1.0472	1.0127	0.9783	0.9438	0.9093	0.8748	0.8403	0.8058	0.7713
	0.050	1.1741	1.1609	1.1436	1.1163	1.0821	1.0478	1.0135	0.9792	0.9449	0.9106	0.8763	0.8420	0.8077	0.7734
	0.100	1.1595	1.1474	1.1313	1.1052	1.0744	1.0436	1.0128	0.9820	0.9512	0.9204	0.8896	0.8588	0.8280	0.7972
	0.200	1.1136	1.1329	1.1164	1.0904	1.0644	1.0384	1.0124	0.9864	0.9604	0.9344	0.9084	0.8824	0.8564	0.8304
	0.300	1.0348	1.1044	1.1179	1.1010	1.0746	1.0482	1.0218	0.9954	0.9690	0.9426	0.9162	0.8898	0.8634	0.8370
	0.400	0.9301	1.1074	1.1192	1.1046	1.0761	1.0476	1.0191	0.9906	0.9621	0.9336	0.9051	0.8766	0.8481	0.8196
	0.500	0.8099	1.1025	1.1124	1.1076	1.0779	1.0492	1.0205	0.9918	0.9631	0.9344	0.9057	0.8770	0.8483	0.8196
	0.600	0.6745	1.0944	1.1044	1.1076	1.0779	1.0492	1.0205	0.9918	0.9631	0.9344	0.9057	0.8770	0.8483	0.8196
	0.700	0.5206	1.0877	1.1033	1.1076	1.0779	1.0492	1.0205	0.9918	0.9631	0.9344	0.9057	0.8770	0.8483	0.8196
Lower surface	0.000	1.139	1.127	1.129	1.138	1.137	1.146	1.155	1.149	1.138	1.138	1.136	1.138	1.130	1.122
	0.025	1.064	1.043	1.041	1.044	1.042	1.046	1.053	1.057	1.054	1.054	1.043	1.045	1.044	1.043
	0.050	0.980	0.917	0.925	0.928	0.932	0.935	0.942	0.945	0.942	0.932	0.930	0.923	0.919	0.913
	0.100	0.804	0.736	0.725	0.729	0.735	0.741	0.747	0.753	0.759	0.765	0.771	0.777	0.783	0.789
	0.200	0.434	0.386	0.322	0.221	0.129	0.038	-0.058	-0.204	-0.223	-0.266	-0.308	-0.351	-0.394	-0.437
	0.300	0.296	0.258	0.207	0.124	0.051	-0.038	-0.130	-0.243	-0.193	-0.002	0.089	0.162	0.228	0.290
	0.400	0.178	0.150	0.109	0.043	-0.011	-0.077	-0.144	-0.217	-0.185	0.003	0.118	0.274	0.407	0.515
	0.500	0.085	0.064	0.034	0.022	-0.069	-0.120	-0.170	-0.226	-0.200	0.003	0.043	0.175	0.347	0.488
	0.600	0.028	0.033	0.054	0.093	0.127	0.158	0.189	0.222	0.204	0.095	0.109	0.275	0.419	0.516
	0.700	0.080	0.074	0.090	0.124	0.150	0.175	0.204	0.215	0.203	0.166	0.135	0.218	0.385	0.504

No orifice.

TABLE 9.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.80 PROPELLER BLADE SECTION ( $\alpha = 0.90$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$  - Continued(d)  $N = 1600$  rpm.

J	M <sub>x</sub>	α <sub>x</sub>	Δβ	α <sub>1</sub>	c <sub>n</sub>	c <sub>m</sub>	c <sub>c</sub>	c/b	Pressure coefficient, P																
									Upper surface																
1.974	2.049	2.109	2.177	2.258	2.321	2.397	2.469	2.428	2.361	2.299	2.227	2.139	2.086	2.022											
.835	.847	.855	.872	.878	.889	.903	.914	.907	.894	.883	.871	.860	.845	.839											
5.08	4.07	3.28	2.41	1.39	.62	-.29	-.13	-.65	.14	.89	1.77	2.89	3.58	4.43											
1.92	1.66	1.44	1.19	.87	.60	.23	-.13	.08	.41	.69	.99	1.33	1.53	1.76											
2.82	2.33	1.85	1.38	.97	.61	.24	-.14	.07	.41	.76	1.14	1.61	1.94	2.37											
.6284	.5194	.4129	.3070	.2165	.1374	.0519	-.0306	.0161	.0916	.1703	.2539	.3573	.4323	.5277											
.0211	.0200	.0179	.0174	.0115	.0041	-.0076	-.0212	-.0128	-.0009	.0090	.0162	.0213	.0233	.0270											
									Lower surface																
1.186	1.190	1.196	1.205	1.207	1.213	1.221	1.226	1.223	1.216	1.210	1.204	1.198	1.191	1.188											
-.1231	-.1049	-.0852	-.0755	-.0623	-.0488	-.0348	-.0209	.0030	-.0204	-.0348	-.0494	-.0724	-.0949	-.1133											
-.1105	-.0880	-.0695	-.0561	-.0423	-.0295	-.0150	.0060	.0249	-.0264	-.0485	-.0735	-.1016	-.1321	-.1621											
-.1037	-.0907	-.0779	-.0635	-.0488	-.0338	-.0187	.0013	.0265	-.0221	-.0387	-.0555	-.0718	-.0840	-.0970											
-.1033	-.0911	-.0791	-.0638	-.0450	-.0237	-.0080	.0137	.0376	-.0225	-.0393	-.0676	-.0983	-.1284	-.1564											
-.0977	-.0851	-.0718	-.0566	-.0407	-.0237	-.0069	.0120	.0362	-.0219	-.0387	-.0683	-.1008	-.1324	-.1631											
-.0909	-.0779	-.0619	-.0456	-.0284	-.0117	.0049	.0196	.0442	-.0214	-.0376	-.0683	-.1018	-.1344	-.1661											
-.0819	-.0685	-.0519	-.0348	-.0172	-.0005	.0167	.0414	.0662	-.0204	-.0376	-.0683	-.1018	-.1344	-.1661											
0	-.025	-.044	-.064	-.084	-.104	-.124	-.144	-.164	-.184	-.204	-.224	-.244	-.264	-.284											
.064	.050	.044	.044	.042	.042	.046	.049	.047	.044	.045	.043	.038	.040	.046											
.120	.116	.116	.122	.125	.129	.135	.144	.138	.133	.132	.125	.115	.110	.111											
.601	.522	.450	.387	.328	.273	.215	.165	-.071	.079	.206	.301	.405	.480	.550											
.442	.372	.310	.258	.208	.153	.095	-.067	-.157	-.011	-.098	-.178	-.268	-.332	-.394											
.319	.261	.208	.144	.078	.010	-.074	-.186	-.277	-.035	-.104	-.184	-.273	-.325	-.378											
.214	.167	.122	.073	.020	-.032	-.090	-.158	-.227	-.065	-.133	-.202	-.271	-.323	-.376											
.124	.082	.044	0	-.044	-.088	-.133	-.187	-.242	-.085	-.153	-.222	-.291	-.343	-.396											
.049	.014	-.022	-.060	-.099	-.138	-.175	-.215	-.255	-.158	-.227	-.296	-.365	-.417	-.470											
.021	-.009	-.039	-.073	-.106	-.142	-.176	-.210	-.245	-.169	-.238	-.307	-.376	-.428	-.481											
-.023	-.046	-.071	-.101	-.130	-.160	-.196	-.226	-.256	-.189	-.258	-.327	-.396	-.448	-.501											
.750	-.023	-.056	-.078	-.095	-.113	-.130	-.148	-.166	-.113	-.182	-.251	-.320	-.372	-.425											
.850	0	-.009	-.021	-.022	-.027	-.034	-.041	-.048	-.055	-.062	-.070	-.077	-.084	-.091											
.925	.108	.108	.105	.112	.114	.142	.159	.150	.125	.111	.104	.102	.103	.102											
.975	.160	.160	.160	.175	.182	.200	.211	.205	.202	.200	.190	.180	.169	.172											
1.000	.175	.200	.214	.225	.228	.240	.242	.240	.230	.245	.220	.210	.188	.200											

No orifice.

NACA

TABLE 9.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004, 80 PROPELLER BLADE SECTION ( $\alpha = 0.90$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.56$ .

J $M_x$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, p													
	Upper surface							Lower surface						
0.000	1.197	1.200	1.205	1.207	1.210	1.215	1.218	1.222	1.225	1.229	1.232	1.236	1.242	1.243
.025	.047	.106	.166	.265	.334	.377	.404	.423	.434	.450	.472	.484	.502	.546
.050	.048	.164	.210	.302	.402	.437	.504	.564	.572	.585	.602	.612	.619	.643
.100	.084	.164	.195	.253	.320	.416	.488	.513	.523	.542	.568	.588	.595	.611
.200	.128	.185	.205	.246	.305	.416	.488	.521	.538	.557	.579	.592	.602	.620
.300	.171	.214	.226	.252	.262	.295	.313	.350	.362	.377	.395	.408	.418	.442
.400	.183	.215	.223	.239	.248	.291	.313	.350	.359	.378	.383	.408	.414	.467
.500	.230	.227	.226	.239	.244	.292	.251	.251	.276	.263	.263	.268	.260	.462
.600	.197	.220	.226	.243	.264	.265	.281	.217	.276	.251	.251	.250	.258	.623
.700	.209	.226	.228	.237	.242	.265	.281	.217	.276	.251	.251	.250	.258	.623
.800	.132	.159	.156	.153	.149	.148	.142	.131	.149	.132	.132	.130	.132	.531
.900	.079	.057	.050	.045	.036	.031	.026	.015	.033	.033	.032	.040	.012	.161
.950	.027	.030	.036	.044	.050	.055	.061	.069	.083	.104	.117	.102	.070	.045
.0375	.276	.154	.102	.027	.036	.107	.158	.204	.240	.278	.317	.345	.378	.405
.075	.298	.206	.166	.107	.056	.004	.026	.088	.120	.154	.189	.213	.246	.270
.150	.240	.164	.125	.125	.090	.048	.016	.017	.043	.071	.101	.121	.148	.167
.250	.213	.187	.170	.146	.123	.095	.049	.047	.025	.002	.023	.038	.062	.078
.350	.223	.209	.198	.184	.169	.151	.134	.115	.095	.077	.056	.042	.021	.008
.450	.240	.236	.228	.221	.214	.206	.196	.183	.173	.167	.153	.126	.106	.097
.550	.224	.225	.223	.221	.219	.219	.216	.209	.197	.187	.173	.166	.149	.143
.650	.213	.220	.218	.221	.225	.233	.233	.240	.234	.228	.217	.211	.198	.191
.750	.158	.169	.168	.171	.178	.188	.190	.199	.211	.235	.257	.273	.267	.270
.850	.074	.084	.083	.086	.093	.100	.101	.100	.101	.109	.133	.197	.285	.319
.925	.054	.047	.048	.045	.045	.039	.042	.047	.051	.048	.031	.004	.028	.144
a. 975	.158	.146	.141	.137	.147	.144	.155	.162	.174	.141	.140	.109	.083	.004
a1.000	.192	.165	.157	.153	.162	.167	.174	.182	.193	.187	.192	.153	.120	.060

No orifice.

NACA

TABLE 9.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.80 PROPELLER BLADE SECTION ( $\alpha = 0.90$ ) $\rho_0/75R = 45.2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$  - Continued(f)  $M = 0.60$ .

J $M_\infty$ $\alpha$ $\Delta\theta$ $\alpha_1$ $c_m$ $c_n$ $c_c$	2.462	2.426	2.395	2.372	2.339	2.322	2.289	2.261	2.232	2.211	2.191	2.167	2.135	2.119	2.093
	.921	.966	.933	.938	.948	.957	.960	.968	.975	.981	.991	.996	1.000	1.010	1.014
	-1.05	-.63	-.27	.01	.40	.61	1.01	1.35	1.71	1.98	2.23	2.53	2.94	3.15	3.49
	.04	.08	.14	.21	.40	.53	.77	.95	1.13	1.23	1.29	1.34	1.40	1.42	1.42
	-.19	-.01	.17	.35	.52	.62	.74	.93	1.01	1.18	1.38	1.53	1.72	1.83	1.96
	-.0423	-.0023	.0377	.0787	.1168	.1374	.1645	.2077	.2261	.2639	.3077	.3400	.3835	.4077	.4377
	-.0247	-.0186	-.0130	-.0116	-.0094	-.0062	-.0012	-.0077	0	-.0007	-.0098	-.0179	-.0291	-.0406	-.0496
	.0088	.0095	.0100	.0104	.0110	.0122	.0145	.0152	.0167	.0185	.0206	.0227	.0247	.0264	.0272
Pressure coefficient, P															
c/b	Upper surface														
	1.230	1.233	1.237	1.239	1.245	1.250	1.252	1.256	1.260	1.264	1.270	1.273	1.275	1.281	1.283
	-.105	-.013	-.069	-.126	-.176	-.194	-.208	-.224	-.244	-.279	-.290	-.293	-.316	-.317	-.324
	-.004	-.079	-.145	-.199	-.262	-.304	-.335	-.366	-.390	-.421	-.427	-.428	-.445	-.445	-.449
	-.100	-.107	-.147	-.177	-.218	-.251	-.292	-.326	-.353	-.385	-.394	-.396	-.415	-.417	-.428
	-.200	-.174	-.207	-.235	-.265	-.291	-.322	-.354	-.384	-.418	-.429	-.433	-.452	-.451	-.454
	-.300	-.248	-.267	-.295	-.323	-.347	-.370	-.403	-.428	-.455	-.461	-.463	-.479	-.476	-.480
	-.400	-.294	-.301	-.320	-.346	-.363	-.383	-.422	-.442	-.469	-.497	-.500	-.518	-.515	-.517
	-.500	-.268	-.279	-.310	-.369	-.396	-.412	-.421	-.452	-.495	-.478	-.523	-.544	-.542	-.543
	-.600	-.274	-.276	-.289	-.310	-.336	-.362	-.389	-.427	-.457	-.478	-.489	-.519	-.520	-.527
	-.700	-.349	-.346	-.348	-.360	-.378	-.399	-.417	-.439	-.453	-.465	-.472	-.497	-.497	-.500
	-.800	-.345	-.381	-.381	-.389	-.402	-.422	-.437	-.460	-.475	-.483	-.484	-.501	-.497	-.493
	-.900	-.032	-.025	-.023	-.034	-.045	-.084	-.092	-.113	-.139	-.252	-.377	-.492	-.535	-.536
	-.950	-.067	.077	.098	.105	.107	.093	.074	.044	.014	-.052	-.123	-.214	-.362	-.473
	-.0375	-.163	-.074	-.015	-.056	.100	.139	.192	.242	.286	.330	.346	.385	.409	.437
	-.075	-.272	-.170	-.111	-.044	-.005	.034	.083	.127	.166	.197	.221	.256	.280	.305
	-.150	-.214	-.163	-.126	-.076	-.046	-.016	.023	.058	.089	.116	.137	.165	.186	.209
	-.250	-.238	-.188	-.156	-.117	-.093	-.068	-.036	-.008	.019	.040	.058	.083	.101	.121
	-.350	-.279	-.212	-.155	-.107	-.149	-.131	-.106	-.082	.059	.040	-.025	-.033	.016	.033
	-.450	-.296	-.276	-.261	-.236	-.221	-.207	-.184	-.164	.082	.040	-.011	-.094	-.076	-.058
	-.550	-.312	-.298	-.286	-.266	-.255	-.243	-.220	-.202	.143	.040	-.011	-.136	-.119	-.101
	-.650	-.314	-.310	-.304	-.291	-.283	-.276	-.258	-.245	.231	.218	-.206	-.193	-.178	-.162
	-.750	-.263	-.331	-.351	-.351	-.347	-.342	-.327	-.316	.301	.291	-.280	-.268	-.253	-.238
	-.850	-.061	-.059	-.064	-.126	-.255	-.365	-.370	-.362	.348	.339	-.331	-.322	-.308	-.293
	-.925	-.081	.086	.087	.083	-.075	-.042	-.040	-.276	.348	.407	-.401	-.394	-.381	-.368
	-.975	.136	.136	.144	.152	.153	.130	.109	.014	.397	.407	-.357	-.335	-.329	-.315
	1.000	.141	.147	.155	.165	.166	.155	.140	.119	.085	.024	-.049	-.142	-.295	-.406

No orifices.





TABLE 9.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-001.80 PROPELLER BLADE SECTION ( $\alpha = 0.90$ ) $\rho_0, 75R = 45, 2^\circ$ ,  $\beta_x = 40^\circ$ ,  $B = 2$  - Concluded(g)  $M = 0.65$ .

J	2.465	2.437	2.412	2.389	2.366	2.337	2.315	2.288	2.265	2.232	2.217	2.197	2.172	2.146	2.126
M <sub>x</sub>	.921	.997	1.003	1.009	1.018	1.023	1.029	1.037	1.043	1.049	1.074	1.067	1.074	1.077	1.083
α <sub>x</sub>	-1.03	-76	-47	-20	.08	.42	.69	1.02	1.30	1.71	2.15	2.15	2.47	2.80	3.06
Δθ	.11	.18	.27	.35	.46	.59	.69	.81	.88	.95	.98	1.01	1.04	1.08	1.09
α <sub>1</sub>	-47	-26	-11	.10	.21	.42	.57	.78	.91	1.03	1.15	1.24	1.36	1.45	1.52
c <sub>n</sub>	-1.055	-0.971	-0.835	.0219	.0474	.0945	.1277	.1742	.2033	.2303	.2555	.2765	.3039	.3219	.3394
c <sub>m</sub>	.0059	.0060	.0047	.0018	-.0031	-.0060	-.0096	-.0155	-.0193	-.0236	-.0262	-.0294	-.0342	-.0386	-.0406
c <sub>c</sub>	.0232	.0252	.0264	.0272	.0272	.0272	.0273	.0278	.0276	.0281	.0284	.0283	.0284	.0288	.0285
Pressure coefficient, P															
c/h	Upper surface														
0.000	1.269	1.272	1.276	1.280	1.286	1.290	1.293	1.298	1.302	1.305	1.311	1.317	1.322	1.325	1.328
.025	.295	.195	.151	.101	.074	.039	.022	.005	.001	.011	.013	.024	.039	.053	.060
.050	.146	.098	.058	.015	.008	.059	.092	.128	.140	.158	.161	.171	.183	.192	.196
.100	.097	.067	.046	.018	.004	.028	.059	.102	.115	.133	.137	.147	.160	.169	.172
.200	.012	.011	.030	.053	.068	.093	.113	.147	.159	.177	.182	.193	.206	.215	.218
.300	.065	.087	.105	.123	.133	.154	.175	.216	.228	.240	.243	.256	.276	.282	.282
.400	.116	.129	.148	.166	.172	.193	.212	.243	.256	.274	.276	.282	.294	.300	.300
.500	.161	.181	.196	.210	.213	.226	.238	.262	.271	.289	.296	.307	.320	.326	.327
.600	.161	.171	.183	.198	.204	.223	.246	.272	.276	.287	.288	.295	.309	.319	.320
.700	.224	.228	.235	.243	.243	.252	.262	.286	.297	.313	.316	.322	.336	.341	.341
.800	.270	.271	.274	.280	.277	.284	.289	.307	.313	.325	.325	.324	.328	.329	.324
.900	.336	.336	.339	.343	.336	.342	.343	.359	.362	.371	.371	.370	.372	.373	.367
.950	.195	.323	.387	.409	.408	.409	.411	.424	.424	.433	.432	.430	.432	.431	.425
Lower surface															
0.375	.044	.010	.058	.108	.150	.204	.242	.290	.325	.357	.388	.418	.449	.479	.499
.075	.159	.114	.072	.014	.036	.095	.133	.179	.213	.243	.272	.299	.329	.357	.376
.150	.107	.059	.020	.014	.039	.071	.098	.131	.158	.182	.207	.231	.252	.276	.295
.250	.167	.120	.084	.048	.018	.014	.037	.066	.089	.109	.131	.150	.172	.195	.212
.350	.191	.150	.122	.087	.060	.030	.010	.012	.032	.048	.066	.083	.100	.120	.134
.450	.232	.196	.171	.146	.125	.103	.088	.070	.051	.037	.019	.004	.013	.031	.047
.550	.249	.225	.209	.186	.167	.148	.134	.117	.099	.087	.070	.053	.037	.021	.005
.650	.275	.256	.241	.221	.203	.186	.173	.160	.144	.133	.118	.103	.089	.073	.058
.750	.319	.303	.292	.276	.260	.244	.232	.222	.209	.201	.188	.172	.157	.143	.128
.850	.355	.342	.332	.318	.301	.287	.276	.270	.256	.248	.235	.221	.206	.193	.180
.950	.400	.385	.378	.369	.363	.349	.339	.332	.321	.315	.303	.290	.278	.268	.255
a. 975	.167	.282	.395	.430	.415	.407	.402	.408	.386	.390	.382	.360	.353	.375	.346
a <sub>1</sub> 1.000	.148	.270	.345	.410	.435	.439	.447	.487	.435	.460	.453	.440	.426	.437	.430

a. No orifice.

TABLE 10. - PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-004 HO PROPELLER BLADE SECTION ( $x = 0.90$ )

$\theta_0.72R = 45.2^\circ$ ,  $\theta_x = 38.85^\circ$ ,  $B = 2$

(a)  $N = 1140$  rpm.

J	$M_x$	$\alpha_x$	$\Delta\theta$	$\alpha_1$	$c_n$	$c_m$	$c/b$	Pressure coefficient, P															
								2.482	2.396	2.326	2.231	2.154	2.081	2.007	1.927	1.957	2.030	2.122	2.194	2.304	2.373	2.449	
80.000	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.025	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.050	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.100	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.200	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.300	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.400	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.500	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.600	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.700	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.800	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.900	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.950	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
.975	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488
1.000	.677	.666	.656	.646	.636	.626	.614	1.907	1.880	1.852	1.824	1.796	1.768	1.740	1.712	1.684	1.656	1.628	1.600	1.572	1.544	1.516	1.488

Two orifice.

NACA

TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $x = 0.95$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 2$  - Continued(b)  $N = 1350$  rpm.

J	$M_\infty$	$\alpha_x$	$\alpha$	$c_l$	$c_n$	$c_c$	2.023	2.137	2.245	2.362	2.455	2.397	2.314	2.201	2.096	1.974	1.883
1.834	7.711	6.123	1.30	2.61	4.194	.0177	1.918	2.137	2.245	2.362	2.455	2.397	2.314	2.201	2.096	1.974	1.883
7.28	1.38	1.30	2.61	4.194	.0177		6.123	3.25	1.90	.778	.790	.08	.782	2.44	.741	.727	.718
2.98	1.38	1.30	2.61	4.194	.0177		1.30	.73	.49	.22	-.01	.14	.33	1.09	.82	1.14	1.37
4.787	.0166	.0177	.0177	.0177	.0177		2.06	1.54	.96	.39	.11	.18	.61	1.72	.2742	2.36	2.79
.0166	.0177	.0177	.0177	.0177	.0177		.3323	.2471	.1548	.0629	-.0015	.0284	.0987	.1748	.2742	.3787	.4475
							.0154	.0090	.0048	-.0015	-.0094	-.0035	.0020	.0062	.0139	.0188	.0180
c/b	Pressure coefficient, P																
Upper surface																	
.0000	1.132	1.138	1.138	1.138	1.138	1.138	1.138	1.148	1.153	1.161	1.166	1.163	1.158	1.150	1.145	1.140	1.136
.025	-1.598	-1.866	-1.866	-1.866	-1.866	-1.866	-1.866	-1.247	-1.11	-1.368	-.036	-.216	-.523	-.855	-1.377	-1.746	-1.954
.050	-1.430	-1.766	-1.766	-1.766	-1.766	-1.766	-1.766	-1.203	-.440	-.267	-.083	-.188	-.337	-.497	-1.351	-1.690	-1.824
.100	-1.072	-1.313	-1.313	-1.313	-1.313	-1.313	-1.313	-.345	-.299	-.188	-.085	-.144	-.221	-.324	-.784	-.953	-.953
.200	-.637	-.899	-.899	-.899	-.899	-.899	-.899	-.282	-.228	-.165	-.111	-.144	-.186	-.243	-.288	-.295	-.368
.300	-.404	-.604	-.604	-.604	-.604	-.604	-.604	-.239	-.199	-.159	-.122	-.144	-.171	-.210	-.249	-.277	-.317
.400	-.299	-.499	-.499	-.499	-.499	-.499	-.499	-.201	-.168	-.139	-.111	-.126	-.145	-.175	-.208	-.237	-.271
.500	-.255	-.445	-.445	-.445	-.445	-.445	-.445	-.194	-.168	-.147	-.130	-.140	-.150	-.173	-.201	-.226	-.248
.600	-.228	-.429	-.429	-.429	-.429	-.429	-.429	-.191	-.172	-.157	-.146	-.153	-.158	-.173	-.201	-.226	-.248
.700	-.199	-.401	-.401	-.401	-.401	-.401	-.401	-.172	-.158	-.149	-.146	-.145	-.148	-.158	-.175	-.190	-.202
.800	-.158	-.361	-.361	-.361	-.361	-.361	-.361	-.147	-.128	-.125	-.126	-.126	-.123	-.128	-.139	-.150	-.159
.900	-.088	-.280	-.280	-.280	-.280	-.280	-.280	-.060	-.058	-.062	-.070	-.065	-.057	-.056	-.061	-.070	-.081
.950	-.023	-.001	-.001	-.001	-.001	-.001	-.001	.027	.028	.027	.023	.026	.030	.032	.027	.012	-.006
Lower surface																	
.0375	.543	.496	.496	.496	.496	.496	.496	.311	.172	.006	-.178	-.069	.072	.220	.347	.458	.521
.075	.376	.335	.335	.335	.335	.335	.335	.180	.071	-.049	-.177	-.101	-.001	.110	.210	.302	.358
.150	.229	.196	.196	.196	.196	.196	.196	.079	-.004	-.075	-.148	-.106	-.041	.031	.101	.171	.213
.250	.121	.096	.096	.096	.096	.096	.096	.010	-.044	-.099	-.145	-.119	-.076	-.025	.027	.079	.111
.350	.055	.034	.034	.034	.034	.034	.034	-.031	-.070	-.109	-.142	-.124	-.093	-.057	-.018	.023	.047
.450	.008	.006	.006	.006	.006	.006	.006	-.059	-.091	-.120	-.143	-.130	-.107	-.078	-.048	.015	.004
.550	-.026	-.038	-.038	-.038	-.038	-.038	-.038	-.079	-.105	-.126	-.145	-.134	-.116	-.094	-.069	-.044	-.029
.650	-.047	-.055	-.055	-.055	-.055	-.055	-.055	-.088	-.108	-.124	-.136	-.129	-.116	-.099	-.079	-.059	-.047
.750	-.068	-.073	-.073	-.073	-.073	-.073	-.073	-.081	-.096	-.106	-.112	-.109	-.102	-.088	-.087	-.073	-.068
.850	-.068	-.066	-.066	-.066	-.066	-.066	-.066	-.075	-.075	-.076	-.073	-.075	-.073	-.074	-.072	-.063	-.062
.925	-.030	-.027	-.027	-.027	-.027	-.027	-.027	-.010	-.001	-.006	.018	.011	.005	-.003	-.024	-.025	-.024
a.975	.007	.016	.016	.016	.016	.016	.016	.047	.077	.101	.114	.106	.093	.060	.030	.020	.010
a1.000	.027	.040	.040	.040	.040	.040	.040	.080	.127	.163	.177	.163	.147	.100	.060	.048	.030

No orifice.

NACA



TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $x = 0.95$ ) $\beta_0, 75^\circ = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 2$  - Continued(d)  $N = 1600$  rpm.

J $M_x$ $\alpha_x$ $\alpha_0$ $\alpha_1$ $\alpha_n$ $\alpha_c$	Pressure coefficient, P										
	2.075	2.172	2.282	2.381	2.467	2.433	2.329	2.231	2.133	2.040	
1.989	.888	.902	.917	.933	.947	.939	.921	.903	.888	.874	
5.17	4.04	2.80	1.45	.27	-.73	-.34	.88	2.07	3.30	4.50	
1.98	1.65	1.26	.80	.32	-.16	.04	.57	1.02	1.42	1.79	
2.99	2.54	1.72	1.07	.47	-.13	.16	.70	1.29	2.03	2.76	
.4813	.4110	.2765	.1719	.0768	-.0213	.0265	.1126	.2087	.3277	.4439	
.0157	.0169	.0179	.0095	-.0035	-.0198	-.0121	.0020	.0107	.0161	.0159	
				.0075	.0091	.0092					
c/b											
1.206	1.213	1.220	1.228	1.237	1.244	1.240	1.230	1.221	1.213	1.205	
-.985	-.825	-.507	-.381	-.178	.071	.039	.279	.453	.673	.934	
-1.024	-.909	-.709	-.523	-.331	-.017	-.103	-.395	-.611	-.787	-.991	
-.940	-.840	-.692	-.471	-.179	.051	.103	-.313	-.547	-.736	-.914	
-.891	-.807	-.635	-.417	-.267	.163	.209	-.304	-.509	-.718	-.878	
-.736	-.721	-.551	-.400	-.201	.161	.162	-.177	-.426	-.611	-.776	
-.580	-.508	-.315	-.122	-.171	.160	.169	-.172	-.123	-.291	-.444	
-.237	-.171	-.127	-.168	-.172	.170	.168	-.191	-.162	-.128	-.144	
-.131	-.140	-.165	-.235	-.242	.224	.232	-.258	-.220	-.162	-.147	
-.140	-.151	-.175	-.226	-.288	.280	.283	-.266	-.202	-.168	-.158	
-.126	-.132	-.140	-.149	-.186	.317	.282	-.151	-.153	-.139	-.139	
-.041	-.041	-.037	-.036	-.026	.037	.023	-.039	-.043	-.038	-.047	
.059	.061	.068	.072	.063	.089	.087	.072	.063	.067	.057	
.480	.412	.305	.178	.025	-.116	-.065	.086	.222	.355	.447	
.329	.269	.177	.070	-.064	-.260	-.169	-.008	.106	.219	.300	
.194	.145	.072	-.008	-.101	-.238	-.168	-.064	.019	.104	.170	
.089	.046	.012	-.074	-.139	.225	.176	.115	-.055	.015	.067	
.016	-.020	-.070	-.121	-.170	.208	.186	.148	-.102	-.044	0	
.059	-.059	-.099	-.139	-.172	.194	.193	.161	-.123	-.078	-.041	
-.062	-.090	-.125	-.160	-.186	.208	.197	.180	-.144	-.103	-.070	
-.094	-.094	-.123	-.157	-.192	.230	.213	.174	-.143	-.107	-.079	
-.068	-.087	-.112	-.141	-.161	.230	.186	.158	-.132	-.097	-.074	
-.062	-.072	-.084	-.092	-.084	.071	.081	-.095	-.093	-.081	-.064	
.016	.016	.019	.025	.044	.060	.051	.029	.017	.015	.018	
.092	.098	.108	.124	.134	.138	.123	.123	.110	.117	.099	
.109	.121	.137	.163	.165	.171	.158	.163	.144	.138	.116	

ano orifice.

NACA

TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95$ ) $\rho_0, 72R = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 2$  - Continued(e)  $M = 0.56$ .

J	2.105	2.123	2.149	2.181	2.212	2.241	2.271	2.302	2.322	2.356	2.387	2.423	2.450	Pressure coefficient, P																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
														$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$	$c/b$

Two orifice.

NACA

TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95^\circ$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 2$  - Continued(r)  $M = 0.60$ .

J $M_\infty$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	2.478	2.438	2.407	2.378	2.355	2.329	2.307	2.276	2.244	2.217	2.199	2.163	2.125	2.103
	2.478	2.438	2.407	2.378	2.355	2.329	2.307	2.276	2.244	2.217	2.199	2.163	2.125	2.103
c/b	Pressure coefficient, P													
	0.000	0.025	0.050	0.075	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300	0.325
Upper surface	1.244	1.250	1.252	1.256	1.262	1.264	1.270	1.272	1.276	1.280	1.288	1.292	1.297	1.304
	1.244	1.250	1.252	1.256	1.262	1.264	1.270	1.272	1.276	1.280	1.288	1.292	1.297	1.304
Lower surface	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075
	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075	-0.075

No orifice.

TABLE 10. - PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 2$  - Continued(g)  $M = 0.65$ .

J	$M_x$	$\alpha_x$	$\Delta\delta$	$\alpha_1$	$c_n$	$c_m$	$c_c$	2.450	2.434	2.418	2.393	2.370	2.341	2.314	2.281	2.275	2.253	2.231	2.210	2.198	2.156	2.147	2.118
								1.013	1.017	1.026	1.033	1.039	1.047	1.053	1.057	1.067	1.074	1.086	1.092	1.100	1.103	1.111	1.121
Upper surface	0.000	0.025	0.050	0.075	0.100	0.125	0.150	0.137	0.121	0.104	0.087	0.070	0.053	0.036	0.019	0.002	-0.015	-0.032	-0.049	-0.066	-0.083	-0.100	-0.117
								0.048	0.053	0.058	0.063	0.068	0.073	0.078	0.083	0.088	0.093	0.098	0.103	0.108	0.113	0.118	0.123
Lower surface	0.075	0.150	0.225	0.300	0.375	0.450	0.525	0.017	0.015	0.013	0.011	0.009	0.007	0.005	0.003	0.001	-0.001	-0.003	-0.005	-0.007	-0.009	-0.011	-0.013
								0.102	0.103	0.104	0.105	0.106	0.107	0.108	0.109	0.110	0.111	0.112	0.113	0.114	0.115	0.116	0.117
a. 0.975	0.000	0.025	0.050	0.075	0.100	0.125	0.150	0.154	0.157	0.160	0.163	0.166	0.169	0.172	0.175	0.178	0.181	0.184	0.187	0.190	0.193	0.196	0.199
								0.140	0.139	0.138	0.137	0.136	0.135	0.134	0.133	0.132	0.131	0.130	0.129	0.128	0.127	0.126	0.125
a1.000	0.075	0.150	0.225	0.300	0.375	0.450	0.525	0.289	0.290	0.291	0.292	0.293	0.294	0.295	0.296	0.297	0.298	0.299	0.300	0.301	0.302	0.303	0.304
								0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
No orifice.	0.075	0.150	0.225	0.300	0.375	0.450	0.525	0.010	0.017	0.024	0.031	0.038	0.045	0.052	0.059	0.066	0.073	0.080	0.087	0.094	0.101	0.108	0.115
								0.157	0.128	0.091	0.054	0.017	-0.020	-0.057	-0.094	-0.131	-0.168	-0.205	-0.242	-0.279	-0.316	-0.353	-0.390
No orifice.	0.150	0.300	0.450	0.600	0.750	0.900	1.050	0.163	0.138	0.101	0.064	0.027	-0.010	-0.047	-0.084	-0.121	-0.158	-0.195	-0.232	-0.269	-0.306	-0.343	-0.380
								0.185	0.161	0.126	0.091	0.056	0.021	-0.014	-0.049	-0.084	-0.119	-0.154	-0.189	-0.224	-0.259	-0.294	-0.329
No orifice.	0.300	0.600	0.900	1.200	1.500	1.800	2.100	0.201	0.186	0.162	0.138	0.114	0.090	0.066	0.042	0.018	-0.006	-0.030	-0.054	-0.078	-0.102	-0.126	-0.150
								0.216	0.201	0.182	0.166	0.156	0.142	0.129	0.115	0.102	0.089	0.076	0.063	0.050	0.037	0.024	0.011
No orifice.	0.450	0.900	1.350	1.800	2.250	2.700	3.150	0.214	0.205	0.192	0.179	0.166	0.153	0.140	0.127	0.114	0.101	0.088	0.075	0.062	0.049	0.036	0.023
								0.238	0.232	0.224	0.215	0.206	0.197	0.188	0.179	0.170	0.161	0.152	0.143	0.134	0.125	0.116	0.107
No orifice.	0.600	1.200	1.800	2.400	3.000	3.600	4.200	0.261	0.259	0.249	0.241	0.230	0.221	0.210	0.200	0.190	0.180	0.170	0.160	0.150	0.140	0.130	0.120
								0.338	0.333	0.327	0.317	0.306	0.295	0.284	0.273	0.262	0.251	0.240	0.230	0.220	0.210	0.200	0.190
No orifice.	0.750	1.500	2.250	3.000	3.750	4.500	5.250	0.361	0.362	0.356	0.348	0.336	0.329	0.314	0.300	0.286	0.272	0.258	0.244	0.230	0.216	0.202	0.188
								0.370	0.374	0.373	0.365	0.346	0.329	0.314	0.300	0.286	0.272	0.258	0.244	0.230	0.216	0.202	0.188
No orifice.	0.900	1.800	2.700	3.600	4.500	5.400	6.300	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
								0.299	0.354	0.374	0.374	0.382	0.377	0.373	0.367	0.361	0.355	0.349	0.343	0.337	0.331	0.325	0.319
No orifice.	0.075	0.150	0.225	0.300	0.375	0.450	0.525	0.010	0.017	0.024	0.031	0.038	0.045	0.052	0.059	0.066	0.073	0.080	0.087	0.094	0.101	0.108	0.115
								0.157	0.128	0.091	0.054	0.017	-0.020	-0.057	-0.094	-0.131	-0.168	-0.205	-0.242	-0.279	-0.316	-0.353	-0.390
No orifice.	0.150	0.300	0.450	0.600	0.750	0.900	1.050	0.163	0.138	0.101	0.064	0.027	-0.010	-0.047	-0.084	-0.121	-0.158	-0.195	-0.232	-0.269	-0.306	-0.343	-0.380
								0.185	0.161	0.126	0.091	0.056	0.021	-0.014	-0.049	-0.084	-0.119	-0.154	-0.189	-0.224	-0.259	-0.294	-0.329
No orifice.	0.300	0.600	0.900	1.200	1.500	1.800	2.100	0.201	0.186	0.162	0.138	0.114	0.090	0.066	0.042	0.018	-0.006	-0.030	-0.054	-0.078	-0.102	-0.126	-0.150
								0.216	0.201	0.182	0.166	0.156	0.142	0.129	0.115	0.102	0.089	0.076	0.063	0.050	0.037	0.024	0.011
No orifice.	0.450	0.900	1.350	1.800	2.250	2.700	3.150	0.214	0.205	0.192	0.179	0.166	0.153	0.140	0.127	0.114	0.101	0.088	0.075	0.062	0.049	0.036	0.023
								0.238	0.232	0.224	0.215	0.206	0.197	0.188	0.179	0.170	0.161	0.152	0.143	0.134	0.125	0.116	0.107
No orifice.	0.600	1.200	1.800	2.400	3.000	3.600	4.200	0.261	0.259	0.249	0.241	0.230	0.221	0.210	0.200	0.190	0.180	0.170	0.160	0.150	0.140	0.130	0.120
								0.338	0.333	0.327	0.317	0.306	0.295	0.284	0.273	0.262	0.251	0.240	0.230	0.220	0.210	0.200	0.190
No orifice.	0.750	1.500	2.250	3.000	3.750	4.500	5.250	0.361	0.362	0.356	0.348	0.336	0.329	0.314	0.300	0.286	0.272	0.258	0.244	0.230	0.216	0.202	0.188
								0.370	0.374	0.373	0.365	0.346	0.329	0.314	0.300	0.286	0.272	0.258	0.244	0.230	0.216	0.202	0.188
No orifice.	0.900	1.800	2.700	3.600	4.500	5.400	6.300	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
								0.299	0.354	0.374	0.374	0.382	0.377	0.373	0.367	0.361	0.355	0.349	0.343	0.337	0.331	0.325	0.319

No orifice.

NACA



TABLE 10.—PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95^\circ$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 1$  - Continued(h) One-blade propeller;  $N = 1500$  rpm.

J $M_\infty$ $\alpha_\infty$ $\Delta\delta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P						
	2.234 .819 2.03 .84 .92 .1755 .0134	2.169 .811 2.84 1.08 1.26 .2394 .0162	2.118 .802 3.49 1.26 1.65 .3110 .0188	2.067 .792 4.14 1.43 1.84 .3445 .0182	2.014 .785 4.84 1.61 2.12 .3981 .0193	1.971 .782 5.41 1.78 2.27 .4245 .0190	1.920 .774 6.10 1.96 2.54 .4742 .0184
Upper surface	$a_{0.000}$	1.178	1.175	1.171	1.167	1.163	1.162
	.025	-.673	-.924	-.1117	-.1270	-.1406	-.1500
	.050	-.805	-.942	-.1114	-.1242	-.1357	-.1435
	.100	-.305	-.671	-.1000	-.1129	-.1247	-.1324
	.200	-.235	-.231	-.202	-.193	-.184	-.171
	.300	-.197	-.208	-.210	-.200	-.195	-.192
	.400	-.167	-.179	-.187	-.190	-.194	-.194
	.500	-.162	-.174	-.183	-.190	-.198	-.200
	.600	-.162	-.173	-.182	-.189	-.198	-.200
	.700	-.138	-.146	-.153	-.161	-.171	-.173
	.800	-.105	-.113	-.122	-.129	-.136	-.137
	.900	-.015	-.028	-.037	-.043	-.052	-.056
Lower surface	.950	.068	.062	.055	.049	.038	.033
	.0175	.259	.320	.374	.429	.472	.510
	.075	.156	.198	.244	.290	.329	.360
	.150	.070	.101	.135	.170	.199	.225
	.250	.009	.035	.059	.086	.108	.129
	.350	-.037	-.018	.002	.025	.041	.058
	.450	-.056	-.043	-.028	-.009	.005	.020
	.550	-.066	-.068	-.055	-.039	.028	.016
	.650	-.093	-.074	-.063	-.051	-.041	-.031
	.750	-.089	-.084	-.076	-.065	-.058	-.049
	.850	-.060	-.059	-.053	-.046	-.041	-.035
	.925	-.055	-.020	-.014	-.006	-.001	.005
$a_{1.000}$	.975	.058	.080	.080	.085	.100	.095
	.990	.180	.170	.172	.170	.160	.150

<sup>a</sup>No orifice.

NACA

TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95$ ) $\rho_0.75R = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 1$  - Continued(1) One-blade propeller;  $M = 0.56$ .

J	M <sub>x</sub>	α <sub>x</sub>	Δθ	α <sub>1</sub>	α <sub>n</sub>	α <sub>m</sub>	α <sub>c</sub>	Pressure coefficient, P															
								c/b															
12.333	1.235	1.238	1.242	1.244	1.250	1.254	1.258	1.261	1.264	1.268	1.274	1.276	1.282	1.288	2.025								
9.929	1.162	1.216	1.253	1.297	1.303	1.332	1.362	1.394	1.417	1.454	1.459	1.496	1.506	1.509	1.021								
8.4	1.090	1.118	1.152	1.191	1.213	1.245	1.279	1.307	1.331	1.358	1.383	1.403	1.427	1.446	1.69								
6.67	1.018	1.046	1.080	1.119	1.141	1.173	1.203	1.228	1.254	1.280	1.303	1.323	1.348	1.368	1.77								
4.62	0.946	0.974	1.008	1.047	1.069	1.101	1.131	1.156	1.182	1.208	1.228	1.253	1.278	1.298	2.75								
2.62	0.874	0.902	0.936	0.975	0.997	1.029	1.059	1.084	1.110	1.136	1.156	1.181	1.206	1.226	5.94								
1.190	0.802	0.830	0.864	0.903	0.925	0.957	0.987	1.012	1.038	1.064	1.084	1.109	1.134	1.154	0.587								
0.118	0.730	0.758	0.792	0.831	0.853	0.885	0.915	0.940	0.966	0.992	1.012	1.037	1.062	1.082	0.519								
0.018	0.658	0.686	0.720	0.759	0.781	0.813	0.843	0.868	0.894	0.920	0.940	0.965	0.990	1.010	0.0477								
	0.586	0.614	0.648	0.687	0.709	0.741	0.771	0.796	0.822	0.848	0.868	0.893	0.918	0.938	0.0212								
	0.514	0.542	0.576	0.615	0.637	0.669	0.699	0.724	0.750	0.776	0.796	0.821	0.846	0.866									
	0.442	0.470	0.504	0.543	0.565	0.597	0.627	0.652	0.678	0.704	0.724	0.749	0.774	0.794									
	0.370	0.398	0.432	0.471	0.493	0.525	0.555	0.580	0.606	0.632	0.652	0.677	0.702	0.722									
	0.298	0.326	0.360	0.399	0.421	0.453	0.483	0.508	0.534	0.560	0.580	0.605	0.630	0.650									
	0.226	0.254	0.288	0.327	0.349	0.381	0.411	0.436	0.462	0.488	0.508	0.533	0.558	0.578									
	0.154	0.182	0.216	0.255	0.277	0.309	0.339	0.364	0.390	0.416	0.436	0.461	0.486	0.506									
	0.082	0.110	0.144	0.183	0.205	0.237	0.267	0.292	0.318	0.344	0.364	0.389	0.414	0.434									
	-0.062	0.038	0.072	0.111	0.133	0.165	0.195	0.220	0.246	0.272	0.292	0.317	0.342	0.362									
	-0.134	-0.034	-0.000	0.039	0.061	0.093	0.123	0.148	0.174	0.194	0.219	0.244	0.269	0.289									
	-0.206	-0.106	-0.070	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.278	-0.178	-0.142	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.350	-0.250	-0.214	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.422	-0.322	-0.286	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.494	-0.394	-0.358	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.566	-0.466	-0.430	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.638	-0.538	-0.502	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.710	-0.610	-0.574	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.782	-0.682	-0.646	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.854	-0.754	-0.718	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.926	-0.826	-0.790	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-0.998	-0.898	-0.862	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.070	-0.970	-0.934	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.142	-1.042	-1.006	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.214	-1.114	-1.078	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.286	-1.186	-1.150	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.358	-1.258	-1.222	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.430	-1.330	-1.294	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.502	-1.402	-1.366	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.574	-1.474	-1.438	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.646	-1.546	-1.510	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.718	-1.618	-1.582	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.790	-1.690	-1.654	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.862	-1.762	-1.726	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-1.934	-1.834	-1.798	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.006	-1.906	-1.870	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.078	-1.978	-1.942	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.150	-2.050	-2.014	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.222	-2.122	-2.086	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.294	-2.194	-2.158	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.366	-2.266	-2.230	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.438	-2.338	-2.302	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.510	-2.410	-2.374	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.582	-2.482	-2.446	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.654	-2.554	-2.518	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.726	-2.626	-2.590	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.798	-2.698	-2.662	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.870	-2.770	-2.734	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-2.942	-2.842	-2.806	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.014	-2.914	-2.878	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.086	-2.986	-2.950	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.158	-3.058	-3.022	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.230	-3.130	-3.094	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.302	-3.202	-3.166	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.374	-3.274	-3.238	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.446	-3.346	-3.310	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.518	-3.418	-3.382	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.590	-3.490	-3.454	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.662	-3.562	-3.526	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.734	-3.634	-3.598	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.806	-3.706	-3.670	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.878	-3.778	-3.742	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-3.950	-3.850	-3.814	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.022	-3.922	-3.886	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.094	-3.994	-3.958	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.166	-4.066	-4.030	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.238	-4.138	-4.102	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.310	-4.210	-4.174	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.382	-4.282	-4.246	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.454	-4.354	-4.318	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205	0.230	0.250									
	-4.526	-4.426	-4.390	0.000	0.022	0.054	0.084	0.109	0.135	0.155	0.180	0.205											

a No orifice.

TABLE 10.—PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004, 10 PROPELLER BLADE SECTION ( $x = 0.95$ ) $\beta_0.75R = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 1$  - Continued(1) One-blade propeller;  $M = 0.58$ .

J	$M_x$	$\alpha_x$	$\Delta \beta$	$\alpha_1$	$c_n$	$c_m$	$c_c$
2.311	2.260	2.189	2.165	2.148	2.117	2.095	2.076
.967	.986	1.001	1.012	1.017	1.027	1.034	1.040
1.10	1.72	2.59	2.89	3.11	3.50	3.78	4.03
.66	1.05	1.40	1.46	1.50	1.54	1.56	1.58
.83	1.22	1.79	1.89	2.03	2.12	2.23	2.35
.1594	.2348	.3477	.3648	.3900	.4042	.4239	.4458
.0166	.0048	-.0297	-.0138	-.0397	-.0390	-.0401	-.0497
.0110	.0141	.0179	.0202	.0211	.0236	.0240	.0227
Pressure coefficient, P							
c/b							
a.000	1.256	1.267	1.276	1.286	1.291	1.295	1.299
.025	.121	.202	.259	.305	.342	.366	.374
.050	.338	.430	.480	.513	.534	.546	.553
.100	.339	.381	.424	.440	.450	.462	.468
.200	.332	.390	.432	.450	.460	.468	.473
.300	.356	.389	.424	.443	.454	.461	.468
.400	.281	.318	.352	.366	.379	.385	.394
.500	.263	.298	.323	.330	.338	.340	.348
.600	.282	.318	.340	.339	.347	.348	.351
.700	.310	.347	.368	.365	.369	.369	.370
.800	.253	.278	.408	.406	.411	.409	.408
.900	.045	.071	.142	.160	.166	.166	.162
.950	.144	.067	.157	.167	.151	.151	.150
.0375	.217	.306	.398	.453	.481	.507	.525
.075	.114	.193	.273	.323	.346	.373	.388
.150	.037	.101	.167	.211	.234	.255	.270
.250	.029	.023	.077	.116	.137	.159	.172
.350	.097	.056	.011	.009	.041	.060	.072
.450	.119	.088	.049	.020	.006	.013	.022
.550	.150	.126	.097	.070	.059	.043	.023
.650	.196	.192	.150	.133	.126	.096	.087
.750	.229	.220	.197	.183	.165	.149	.130
.850	.190	.230	.237	.231	.218	.205	.186
.925	.151	.266	.215	.210	.217	.234	.225
a.975	.040	.025	.061	.151	.400	.456	.290
a1.000	.220	.172	.172	.235	.443	.525	.318

TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95^\circ$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.95^\circ$ ,  $B = 1$  - Continued(k) One-blade propeller;  $M = 0.60$ .

J	M <sub>x</sub>	α <sub>x</sub>	Δθ	α <sub>1</sub>	α <sub>n</sub>	c <sub>m</sub>	c <sub>c</sub>	Pressure coefficient, P																									
2.392	2.325	2.254	2.219	2.171	2.149	2.120	2.092	2.069	2.037	2.018	1.998	1.977	1.956	1.933	Upper surface	1.337	1.332	1.328	1.324	1.320	1.318	1.310	1.308	1.301	1.296	1.295	1.289	1.279	1.270				
.992	1.007	1.024	1.034	1.035	1.042	1.052	1.056	1.069	1.070	1.076	1.084	1.090	1.097	1.106		1.337	1.321	1.311	1.292	1.277	1.251	1.228	1.194	1.147	1.133	.087	.040	.012	.006				
.14	.93	1.79	2.22	2.82	3.09	3.46	3.82	4.12	4.54	4.78	5.05	5.23	5.61			1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.12	.49	1.04	1.25	1.38	1.40	1.44	1.46	1.47	1.48	1.49	1.50	1.50	1.50			1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.48	.84	1.32	1.55	1.78	1.86	2.04	2.17	2.27	2.41	2.49	2.58	2.68	2.81			1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.0919	.1623	.2555	.2984	.3432	.3561	.3894	.4113	.4294	.4535	.4665	.4800	.5010	.5226			1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
-.0035	.0039	-.0161	-.0329	-.0348	-.0382	-.0424	-.0453	-.0480	-.0508	-.0478	-.0501	-.0569	-.0625			1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.0143	.0178	.0204	.0225	.0224	.0225	.0225	.0227	.0225	.0227	.0238	.0235	.0228	.0228			1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
c/b																																	
a <sub>0</sub> .000	1.270	1.279	1.289	1.295	1.296	1.301	1.308	1.310	1.318	1.320	1.328	1.332	1.337	1.343		Lower surface	1.337	1.332	1.328	1.324	1.320	1.318	1.310	1.308	1.301	1.296	1.295	1.289	1.279	1.270			
.025	.140	.046	.042	.037	.036	.034	.029	.028	.028	.027	.026	.025	.024	.023	1.337		1.321	1.311	1.292	1.277	1.251	1.228	1.194	1.147	1.133	.087	.040	.012	.006				
.050	.270	.179	.212	.258	.296	.308	.329	.342	.354	.359	.368	.375	.381	.386	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.100	.098	.189	.225	.259	.294	.301	.329	.342	.354	.359	.368	.375	.381	.386	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.200	.112	.157	.204	.238	.271	.317	.346	.357	.363	.376	.384	.387	.391	.398	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.300	.181	.238	.252	.283	.312	.340	.346	.357	.363	.376	.384	.387	.391	.398	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.400	.146	.176	.202	.234	.252	.262	.287	.297	.303	.328	.338	.346	.350	.355	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.500	.126	.153	.179	.206	.220	.226	.242	.250	.250	.268	.270	.275	.276	.280	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.600	.145	.184	.200	.226	.238	.241	.253	.260	.258	.275	.270	.275	.279	.282	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.700	.173	.213	.228	.256	.266	.268	.278	.284	.279	.294	.294	.297	.298	.299	1.337		1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.800	.214	.256	.266	.293	.305	.307	.317	.320	.315	.327	.326	.327	.328	.329	1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314					
.900	.215	.276	.315	.342	.354	.356	.368	.374	.370	.379	.380	.379	.379	.379	1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314					
.950	.149	.054	.218	.383	.401	.405	.416	.421	.415	.425	.420	.420	.418	.418	1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314					
.0375	.189	.310	.425	.449	.477	.516	.551	.572	.601	.620	.667	.683	.708	.727	Lower surface	1.337	1.332	1.328	1.324	1.320	1.318	1.310	1.308	1.301	1.296	1.295	1.289	1.279	1.270				
.075	.112	.208	.312	.374	.394	.434	.469	.498	.527	.541	.577	.583	.594	.594		1.337	1.321	1.311	1.292	1.277	1.251	1.228	1.194	1.147	1.133	.087	.040	.012	.006				
.150	.055	.133	.220	.268	.284	.308	.325	.325	.352	.363	.404	.418	.438	.455		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.250	.004	.068	.144	.186	.199	.223	.223	.237	.263	.269	.311	.322	.341	.355		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.350	-.042	.004	.063	.088	.092	.102	.117	.117	.151	.160	.178	.183	.195	.206		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.450	-.063	.028	.024	.045	.048	.056	.072	.083	.102	.108	.123	.123	.136	.146		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.550	-.095	.068	.018	.020	.004	.012	.022	.030	.048	.051	.062	.062	.078	.089		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.650	-.127	.103	.062	.051	.044	.043	.034	.027	.008	.008	.004	.004	.028	.034		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.750	-.169	.150	.112	.104	.104	.095	.086	.078	.061	.060	.050	.043	.043	.054		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.850	-.211	.199	.166	.153	.144	.131	.124	.116	.101	.100	.090	.086	.087	.093		1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314				
.925	.045	.281	.189	.153	.144	.131	.124	.116	.101	.100	.090	.086	.087	.093	1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314					
a <sub>1</sub> .000	.283	.214	.185	.264	.223	.220	.213	.206	.191	.180	.161	.153	.144	.133	1.337	1.337	1.338	1.336	1.335	1.334	1.332	1.332	1.331	1.329	1.328	1.325	1.319	1.314					

airfoil surface.

NACA

TABLE 10.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-004.40 PROPELLER BLADE SECTION ( $\alpha = 0.95^\circ$ )

$\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.85^\circ$ ,  $B = 1$  - Concluded

(1) One-blade propeller;  $M = 0.62$ .

J	$M_x$	$C_{x'}$	$\Delta\theta$	$\alpha_1$	$C_n$	$C_m$	$C_c$	Pressure coefficient, P											
								2.389	2.332	2.253	2.224	2.192	2.171	2.133	2.115	2.083	2.056	2.028	1.993
0.000	1.014	1.033	1.056	1.065	1.074	1.078	1.084	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090	1.090
0.025	.17	.85	1.80	2.16	2.55	2.82	3.30	3.94	4.29	4.65	5.12	5.36	5.41	5.43	5.43	5.43	5.43	5.43	5.43
0.050	.19	.49	1.01	1.14	1.23	1.27	1.32	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
0.100	.37	.76	1.19	1.30	1.50	1.56	1.72	2.08	2.22	2.41	2.56	2.82	3.00	3.28	3.60	3.98	4.168	4.523	4.803
0.200	.0706	.1461	.2277	.2523	.2897	.3281	.3600	.3938	.4168	.4470	.4700	.4930	.5160	.5390	.5620	.5850	.6080	.6310	.6540
0.300	.0035	.0113	.0238	.0242	.0233	.0244	.0233	.0230	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232
0.400	.0189	.0226	.0238	.0242	.0233	.0244	.0233	.0230	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232	.0232
0.500																			
0.600																			
0.700																			
0.800																			
0.900																			
0.950																			
0.975																			
1.000																			
0.0375	.127	.235	.354	.384	.420	.440	.475	.502	.535	.567	.600	.627	.654	.681	.708	.735	.762	.789	.816
0.075	.050	.137	.243	.271	.298	.314	.344	.371	.399	.427	.453	.478	.503	.528	.553	.578	.603	.628	.653
0.150	.013	.065	.156	.179	.206	.222	.248	.270	.295	.322	.350	.370	.390	.410	.430	.450	.470	.490	.510
0.250	.069	.065	.073	.094	.115	.128	.132	.171	.195	.217	.246	.262	.282	.302	.322	.342	.362	.382	.402
0.350	.108	.064	.003	.014	.031	.042	.060	.079	.099	.120	.145	.157	.177	.197	.217	.237	.257	.277	.297
0.450	.132	.102	.050	.035	.021	.011	.006	.023	.042	.061	.080	.099	.118	.137	.156	.175	.194	.213	.232
0.550	.167	.114	.098	.083	.069	.055	.046	.038	.030	.022	.014	.006	.000	.000	.000	.000	.000	.000	.000
0.650	.197	.119	.110	.129	.116	.113	.108	.103	.103	.103	.103	.103	.103	.103	.103	.103	.103	.103	.103
0.750	.248	.230	.191	.181	.170	.164	.152	.137	.120	.106	.088	.073	.058	.043	.028	.013	.000	.000	.000
0.850	.290	.273	.241	.231	.220	.216	.206	.191	.176	.163	.147	.132	.117	.102	.087	.072	.057	.042	.027
0.925	.325	.254	.323	.326	.254	.303	.206	.191	.176	.163	.147	.132	.117	.102	.087	.072	.057	.042	.027
0.975	.139	.351	.396	.408	.281	.382	.386	.241	.226	.200	.193	.174	.159	.144	.129	.114	.099	.084	.069
1.000	.110	.368	.437	.460	.295	.425	.435	.255	.235	.234	.200	.191	.174	.157	.140	.123	.106	.089	.072

No orifice.

NACA

TABLE 11.-- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-003.72 PROPELLER BLADE SECTION ( $\alpha = 0.975^\circ$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.50^\circ$ ,  $B = 2$ (a)  $N = 1140$  rpm.

J $M_x$ $\alpha_x$ $\Delta\beta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P													c/b
	2.002	2.096	2.191	2.313	2.409	2.449	2.379	2.346	2.265	2.233	2.147	2.063	1.977	
0.000	1.922	2.002	2.096	2.191	2.313	2.409	2.449	2.379	2.346	2.265	2.233	2.147	2.063	1.977
0.025	.621	.627	.638	.657	.668	.670	.663	.660	.653	.649	.638	.628	.621	.621
0.050	6.39	5.33	4.12	2.92	1.44	.31	.67	1.05	2.02	2.41	3.47	4.54	5.66	5.66
0.075	.87	.77	.62	.45	.20	-.05	.08	.15	.30	.36	.53	.68	.80	.80
0.100	3.00	2.42	1.88	.69	.21	-.06	.38	.49	.87	.99	1.51	2.07	2.63	2.63
0.125	.3465	.2794	.2174	.1458	.0813	-.0061	.0442	.0568	.1010	.1145	.1735	.2374	.3039	.3039
0.150	.0003	0	-.0005	.0007	.0010	-.0021	-.0051	0	.0008	.0016	.0010	.0021	.0031	.0031
Upper surface														
0.175	1.100	1.102	1.106	1.109	1.112	1.116	1.117	1.115	1.114	1.111	1.106	1.102	1.100	1.100
0.200	-.1700	-.1410	-.1007	-.584	-.379	-.120	.097	-.203	-.273	-.458	-.690	-.1199	-.1477	-.1477
0.225	-.583	-.853	-.540	-.406	-.265	-.134	-.093	-.177	-.212	-.307	-.472	-.583	-.707	-.707
0.250	-.321	-.276	-.243	-.195	-.158	-.120	-.120	-.129	-.140	-.169	-.220	-.257	-.300	-.300
0.275	-.240	-.205	-.176	-.140	-.111	-.090	-.078	-.099	-.097	-.118	-.160	-.188	-.218	-.218
0.300	-.195	-.168	-.143	-.111	-.089	-.071	-.062	-.073	-.079	-.096	-.128	-.153	-.179	-.179
0.325	-.235	-.213	-.186	-.160	-.142	-.130	-.123	-.130	-.135	-.147	-.174	-.196	-.225	-.225
0.350	-.209	-.190	-.166	-.142	-.127	-.116	-.110	-.115	-.118	-.131	-.156	-.175	-.199	-.199
0.375	-.189	-.171	-.150	-.126	-.114	-.103	-.099	-.102	-.107	-.116	-.140	-.158	-.179	-.179
0.400	-.170	-.153	-.133	-.113	-.103	-.096	-.093	-.094	-.097	-.105	-.125	-.141	-.160	-.160
0.425	-.137	-.124	-.107	-.092	-.084	-.082	-.081	-.077	-.080	-.088	-.102	-.114	-.131	-.131
0.450	-.051	-.030	-.026	-.013	-.009	-.007	-.006	-.003	-.003	-.009	-.021	-.032	-.047	-.047
0.475	.411	.349	.289	.185	.052	-.084	-.123	-.032	.003	.093	.133	.306	.367	.367
0.500	.213	.165	.118	.042	-.031	-.137	-.162	-.104	-.080	-.022	.006	.130	.178	.178
0.525	.113	.082	.052	.005	-.051	-.097	-.110	-.077	-.066	-.033	-.016	.058	.089	.089
0.550	.036	.015	-.004	-.037	-.076	-.114	-.133	-.093	-.085	-.065	-.053	.004	.017	.017
0.575	0	-.014	-.026	-.048	-.076	-.102	-.110	-.088	-.082	-.072	-.062	-.041	-.012	-.012
0.600	-.007	-.019	-.031	-.050	-.075	-.093	-.095	-.082	-.079	-.075	-.070	-.046	-.030	-.030
0.625	-.024	-.036	-.044	-.060	-.083	-.096	-.096	-.087	-.083	-.075	-.068	-.046	-.035	-.035
0.650	-.031	-.041	-.047	-.061	-.078	-.090	-.090	-.082	-.080	-.073	-.070	-.049	-.041	-.041
0.675	-.034	-.041	-.047	-.056	-.074	-.081	-.081	-.074	-.072	-.068	-.065	-.049	-.044	-.044
0.700	-.063	-.070	-.070	-.077	-.087	-.091	-.088	-.087	-.086	-.084	-.082	-.074	-.073	-.073
0.725	-.039	-.036	-.036	-.034	-.037	-.036	-.032	-.032	-.032	-.026	-.037	-.039	-.041	-.041
0.750	-.020	-.033	-.060	-.060	-.052	-.065	-.095	-.080	-.090	-.090	.070	.065	.040	.040
0.775	.053	.076	.132	.124	.101	.142	.199	.160	.203	.198	.176	.166	.103	.103
Lower surface														
0.800	1.100	1.102	1.106	1.109	1.112	1.116	1.117	1.115	1.114	1.111	1.106	1.102	1.100	1.100
0.825	-.1700	-.1410	-.1007	-.584	-.379	-.120	.097	-.203	-.273	-.458	-.690	-.1199	-.1477	-.1477
0.850	-.583	-.853	-.540	-.406	-.265	-.134	-.093	-.177	-.212	-.307	-.472	-.583	-.707	-.707
0.875	-.321	-.276	-.243	-.195	-.158	-.120	-.120	-.129	-.140	-.169	-.220	-.257	-.300	-.300
0.900	-.240	-.205	-.176	-.140	-.111	-.090	-.078	-.099	-.097	-.118	-.160	-.188	-.218	-.218
0.925	-.195	-.168	-.143	-.111	-.089	-.071	-.062	-.073	-.079	-.096	-.128	-.153	-.179	-.179
0.950	-.235	-.213	-.186	-.160	-.142	-.130	-.123	-.130	-.135	-.147	-.174	-.196	-.225	-.225
NACA														

a No orifice.

b Paired value.

TABLE 11.-- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-003.72 PROPELLER BLADE SECTION ( $x = 0.975$ ) $\theta_0 = 75^\circ$ ,  $\theta_x = 45.2^\circ$ ,  $\theta_y = 38.50^\circ$ ,  $B = 2$  - Continued(b)  $N = 1350$  rpm.

J $M_\infty$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $\alpha_n$ $c_m$ $c_c$	Pressure coefficient, P													
	c/b													
	2.475 .807 -0.44 -0.06 -0.26 -0.303 -0.0075	2.418 .794 .21 .09 .12 .0139 -0.0002	2.299 .779 1.61 .36 .79 .0919 .0031	2.183 .762 3.02 .63 1.45 .1684 .0041	2.066 .752 4.50 .89 2.31 .2665 .0074	1.966 .739 5.81 1.18 3.11 .3594 .0039	1.853 .729 7.33 1.40 3.76 .4335 .0003	1.861 .727 7.22 1.40 3.67 .4226 -0.0002	1.900 .732 6.69 1.39 3.34 .3858 -0.0007	2.026 .746 5.02 .99 2.72 .3135 .0054	2.128 .757 3.71 .75 1.81 .2090 .0023	2.242 .774 2.30 .49 1.13 .1313 .0025	2.355 .788 .95 .24 .60 .0700 .0012	2.457 .802 -23 -01 -21 -0252 -0055
Upper surface	1.173 .048 -0.92 -1.55 -1.10 -0.86 -0.70 -1.36 -1.28 -1.13 -1.05 -0.88 -0.01	1.168 -1.113 -1.142 -1.199 -1.132 -0.996 -0.76 -1.140 -1.127 -1.114 -1.103 -0.70 -0.005	1.161 -1.490 -1.327 -1.292 -1.179 -1.128 -1.01 -1.159 -1.146 -1.129 -1.116 -0.90 -0.002	1.154 -1.829 -1.472 -1.372 -1.228 -1.164 -1.132 -1.184 -1.169 -1.151 -1.136 -1.107 -0.17	1.150 -1.394 -1.184 -1.402 -1.269 -1.201 -1.164 -1.218 -1.199 -1.178 -1.159 -1.128 -0.34	1.145 -1.740 -1.539 -1.466 -1.304 -1.239 -1.202 -1.258 -1.235 -1.212 -1.191 -1.156 -0.57	1.141 -1.502 -1.253 -1.032 -1.452 -1.298 -1.260 -1.293 -1.265 -1.237 -1.210 -1.172 -0.76	1.140 -1.459 -1.203 -1.050 -1.439 -1.289 -1.256 -1.286 -1.262 -1.234 -1.212 -1.171 -0.75	1.142 -1.591 -1.325 -1.857 -1.388 -1.265 -1.234 -1.275 -1.251 -1.225 -1.204 -1.165 -0.66	1.148 -1.593 -1.366 -1.421 -1.286 -1.216 -1.179 -1.235 -1.214 -1.191 -1.173 -1.138 -0.86	1.152 -1.204 -1.649 -1.409 -1.247 -1.177 -1.143 -1.196 -1.180 -1.159 -1.143 -1.113 -0.19	1.159 -1.660 -1.409 -1.331 -1.202 -1.143 -1.113 -1.166 -1.152 -1.124 -1.115 -0.97 -0.05	1.165 -1.337 -1.247 -1.257 -1.164 -1.117 -1.094 -1.152 -1.141 -1.124 -1.115 -0.90 -0.01	1.171 -0.92 -0.69 -1.56 -1.17 -0.79 -0.69 -1.30 -1.12 -1.08 -1.00 -0.79 -0.08
Lower surface	-0.0375 -0.075 -0.150 -0.250 -0.350 -0.450 -0.550 -0.650 -0.750 -0.850 -0.925 -0.975 -1.000	-0.088 -1.157 -1.113 -1.136 -1.120 -1.108 -1.100 -1.104 -1.091 -1.103 -1.030 -0.42 -0.087	-0.086 -0.039 -0.048 -0.116 -0.096 -0.087 -0.085 -0.090 -0.082 -0.099 -0.037 -0.045 -0.092	-0.210 -0.050 -0.003 -0.079 -0.071 -0.069 -0.071 -0.074 -0.098 -0.098 -0.040 -0.044 -0.098	-0.316 -1.135 -0.96 -0.82 -0.42 -0.47 -0.32 -0.04 -0.63 -0.90 -0.04 -0.58 -1.28	-1.406 -1.206 -0.98 -0.06 -0.16 -0.27 -0.35 -0.49 -0.49 -0.85 -0.47 -0.66 -1.50	-1.472 -1.261 -1.127 -0.04 -0.10 -0.22 -0.04 -0.43 -0.43 -0.84 -0.58 -0.29 -0.93	-1.459 -1.249 -1.120 -0.023 -0.001 -0.16 -0.25 -0.45 -0.45 -0.86 -0.59 -0.40 -0.66 -1.07	-1.441 -1.235 -1.111 -0.009 -0.006 -0.021 -0.28 -0.45 -0.43 -0.85 -0.53 -0.21 -0.78	-1.365 -1.173 -0.979 -0.824 -0.824 -0.835 -0.838 -0.803 -0.803 -0.848 -0.883 -0.42 -1.19	-1.267 -0.95 -0.33 -0.058 -0.056 -0.060 -0.069 -0.069 -0.059 -0.088 -0.37 -0.78 -1.63	-1.158 -0.14 -0.14 -0.088 -0.075 -0.078 -0.080 -0.078 -0.078 -0.088 -0.29 -0.63 -1.22	-0.039 -0.020 -0.036 -0.221 -1.140 -0.886 -0.093 -0.095 -0.095 -0.078 -0.089 -0.033 -0.065 -1.134	-0.099 -0.067 -0.438 -1.90 -0.88 -0.92 -1.03 -1.07 -0.84 -0.91 -0.31 -0.95 -1.00

No orifice.

NACA





TABLE 11.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-003.72 PROPELLER BLADE SECTION ( $\alpha = 0.975^\circ$ )

$\rho_0.75R = 45.2^\circ$ ,  $\beta_x = 38.50^\circ$ ,  $B = 2$  - Continued

(d)  $N = 1600$  rpm.

J	1.979	2.071	2.132	2.177	2.246	2.303	2.376	2.427	2.480	2.457	2.400	2.335	2.271	2.229	2.173	2.109	2.057	2.008	
M <sub>x</sub>	.888	.896	.904	.912	.923	.933	.945	.952	.961	.956	.947	.929	.926	.919	.910	.900	.891	.884	
α <sub>x</sub> '	5.63	4.44	3.66	3.10	2.25	1.56	.70	.11	-.50	-.23	.42	1.18	1.95	2.46	3.15	3.95	4.60	5.25	
Δθ	2.05	1.70	1.44	1.25	.96	.70	.35	.06	-.27	-.12	.21	.55	.85	1.02	1.27	1.54	1.75	1.95	
α <sub>1</sub>	3.97	3.11	2.52	2.01	1.46	.99	.41	.12	-.25	-.11	.25	.63	1.18	1.59	2.09	2.70	3.24	3.62	
c <sub>n</sub>	.4626	.3606	.2936	.2342	.1719	.1165	.0484	.0139	-.0294	-.0129	.0290	.0742	.1387	.1852	.2439	.3129	.3761	.4213	
c <sub>m</sub>	-.0090	-.0002	.0020	.0038	.0058	.0030	-.0020	-.0061	-.0139	-.0104	-.0043	.0024	.0032	.0034	.0016	.0011	-.0015	-.0048	
c <sub>c</sub>							.0037	.0048	.0057	.0055	.0046								
c/b	Pressure coefficient, P																		
Upper surface	a <sub>0</sub> .000	1.213	1.217	1.221	1.225	1.231	1.237	1.243	1.247	1.252	1.249	1.244	1.234	1.233	1.229	1.224	1.219	1.214	1.211
	.025	-1.015	-.823	-.660	-.464	-.391	-.291	-.149	-.009	.125	.069	-.074	-.203	-.348	-.410	-.512	-.732	-.889	-.984
	.050	-.982	-.819	-.676	-.623	-.546	-.382	-.224	-.110	.002	-.047	-.169	-.257	-.475	-.573	-.625	-.743	-.874	-.954
	.100	-.894	-.798	-.704	-.623	-.513	-.407	-.259	-.191	-.102	-.154	-.217	-.312	-.452	-.537	-.634	-.742	-.841	-.880
	.200	-.798	-.652	-.575	-.512	-.443	-.355	-.253	-.220	-.180	-.195	-.239	-.261	-.402	-.461	-.520	-.607	-.689	-.739
	.300	-.626	-.441	-.390	-.341	-.269	-.144	-.119	-.106	-.099	-.101	-.111	-.108	-.180	-.283	-.349	-.409	-.461	-.506
	.400	-.466	-.383	-.321	-.213	-.114	-.104	-.101	-.100	-.097	-.098	-.100	-.089	-.102	-.116	-.171	-.319	-.390	-.436
	.500	-.296	-.250	-.188	-.172	-.178	-.198	-.187	-.186	-.185	-.185	-.187	-.177	-.196	-.177	-.171	-.188	-.213	-.245
	.600	-.196	-.191	-.184	-.190	-.204	-.220	-.208	-.198	-.192	-.195	-.202	-.198	-.215	-.203	-.188	-.195	-.200	-.216
	.700	-.213	-.194	-.185	-.187	-.193	-.218	-.240	-.238	-.230	-.236	-.241	-.217	-.195	-.192	-.186	-.194	-.202	-.216
	.800	-.207	-.181	-.168	-.164	-.158	-.149	-.167	-.244	-.255	-.254	-.208	-.130	-.156	-.162	-.164	-.178	-.189	-.202
	.900	-.169	-.141	-.122	-.111	-.098	-.082	-.066	-.059	-.120	-.076	-.065	-.060	-.093	-.103	-.115	-.135	-.152	-.168
.950	-.041	-.014	0	.009	.020	.034	.049	.046	.054	.056	.051	.058	.023	.016	.008	-.009	-.023	-.037	
Lower surface	.0375	.447	.373	.323	.269	.204	.133	.047	-.038	-.122	-.077	-.004	.098	.163	.217	.282	.338	.389	.420
	.075	.243	.179	.131	.085	.030	-.030	-.109	-.210	-.261	-.246	-.165	-.060	-.004	.043	.098	.144	.190	.216
	.150	.122	.073	.041	.007	-.030	-.074	-.135	-.200	-.262	-.230	-.176	-.093	-.055	.022	.081	.051	.082	.100
	.250	.018	.017	-.043	-.068	-.102	-.137	-.179	-.199	-.219	-.202	-.198	-.147	-.121	-.093	-.060	-.036	-.014	0
	.350	-.034	-.063	-.085	-.104	-.123	-.135	-.155	-.168	-.191	-.175	-.165	-.130	-.129	-.119	-.097	-.077	-.057	-.048
	.450	-.043	-.066	-.082	-.095	-.106	-.119	-.136	-.145	-.146	-.147	-.141	-.112	-.111	-.103	-.089	-.077	-.061	-.052
	.550	-.065	-.083	-.094	-.104	-.120	-.140	-.149	-.167	-.170	-.175	-.159	-.132	-.129	-.114	-.098	-.085	-.073	-.069
	.650	-.064	-.074	-.085	-.101	-.120	-.144	-.162	-.183	-.198	-.189	-.181	-.134	-.130	-.115	-.095	-.081	-.069	-.066
	.750	-.051	-.063	-.075	-.092	-.108	-.128	-.145	-.170	-.194	-.189	-.175	-.122	-.119	-.106	-.087	-.075	-.061	-.060
	.850	-.073	-.081	-.090	-.101	-.113	-.123	-.142	-.161	-.161	-.146	-.141	-.116	-.123	-.115	-.101	-.092	-.083	-.081
	.925	-.028	-.023	-.021	-.023	-.022	-.015	-.003	.014	.014	.010	0	.006	-.020	.022	.020	.024	.025	.029
	a <sub>1</sub> .975	.060	.080	.110	.130	.140	.158	.173	.178	.173	.148	.138	.130	.133	.165	.228	.260	.275	.275
a <sub>1</sub> .000	.108	.140	.185	.218	.277	.300	.275	.255	.270	.218	.206	.190	.220	.225	.228	.260	.275	.275	

a<sub>0</sub> No orifice.

NACA

TABLE 11.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN

NACA 16-003.72 PROPELLER BLADE SECTION ( $\alpha = 0.975^\circ$ ) $\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.50^\circ$ ,  $B = 2$  - Continued(a)  $M = 0.57$ .

J $M_x$ $\alpha_x$ $\Delta\theta$ $\alpha_1$ $c_n$ $c_m$ $c_c$	Pressure coefficient, P															
	c/b															
0.000	1.223	1.227	1.231	1.235	1.240	1.244	1.247	1.251	1.255	1.259	1.263	1.270	1.275	1.278	1.284	1.288
0.025	0.97	0.91	0.86	0.81	0.76	0.71	0.66	0.61	0.56	0.51	0.46	0.41	0.36	0.31	0.26	0.21
0.050	0.93	0.87	0.82	0.77	0.72	0.67	0.62	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17
0.100	0.89	0.83	0.78	0.73	0.68	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13
0.200	0.85	0.79	0.74	0.69	0.64	0.59	0.54	0.49	0.44	0.39	0.34	0.29	0.24	0.19	0.14	0.09
0.300	0.81	0.75	0.70	0.65	0.60	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.10	0.05
0.400	0.77	0.71	0.66	0.61	0.56	0.51	0.46	0.41	0.36	0.31	0.26	0.21	0.16	0.11	0.06	0.01
0.500	0.73	0.67	0.62	0.57	0.52	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	-0.03
0.600	0.69	0.63	0.58	0.53	0.48	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-0.02	-0.07
0.700	0.65	0.59	0.54	0.49	0.44	0.39	0.34	0.29	0.24	0.19	0.14	0.09	0.04	-0.01	-0.06	-0.11
0.800	0.61	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.10	0.05	0.00	-0.05	-0.10	-0.15
0.900	0.57	0.51	0.46	0.41	0.36	0.31	0.26	0.21	0.16	0.11	0.06	0.01	-0.04	-0.09	-0.14	-0.19
0.950	0.53	0.47	0.42	0.37	0.32	0.27	0.22	0.17	0.12	0.07	0.02	-0.03	-0.08	-0.13	-0.18	-0.23
0.975	0.51	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.10	0.05	0.00	-0.05	-0.10	-0.15	-0.20	-0.25
1.000	0.49	0.43	0.38	0.33	0.28	0.23	0.18	0.13	0.08	0.03	-0.02	-0.07	-0.12	-0.17	-0.22	-0.27

aNo orifice.

NACA

TABLE 11... PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-003.72 PROPELLER BLADE SECTION ( $x = 0.975$ )

TABLE 11.- PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF AN  
NACA 16-003.72 PROPELLER BLADE SECTION ( $\alpha = 0.975^\circ$ )

$\beta_{0.75R} = 45.2^\circ$ ,  $\beta_x = 38.50^\circ$ ,  $B = 2$  - Concluded

(g)  $M = 0.65$ .

J M <sub>x</sub> α <sub>x</sub> Δδ α <sub>1</sub> c <sub>n</sub> c <sub>m</sub> c <sub>c</sub>	Pressure coefficient, P															
	c/b															
2.459 1.040 -.26 .10 -.39 -.0461 .0040 .0167	2.431 1.047 .06 .19 -.07 -.0084 .0050 .0171	2.408 1.053 .33 .27 .10 .0110 .0038 .0171	2.389 1.062 .55 .34 .23 .0271 .0017 .0172	2.355 1.068 .95 .50 .43 .0510 -.0005 .0172	2.324 1.075 1.31 .67 .59 .0681 -.0021 .0172	2.294 1.084 1.67 .82 .87 .1016 -.0039 .0169	2.269 1.095 1.97 .90 1.07 .1242 -.0068 .0170	2.237 1.106 2.36 .97 1.28 .1494 -.0095 .0169	2.218 1.109 2.59 1.00 1.41 .1635 -.0135 .0171	2.194 1.125 2.88 1.04 1.66 .1932 -.0168 .0171	2.152 1.129 3.41 1.09 1.86 .2158 -.0199 .0173	2.141 1.137 3.54 1.10 1.93 .2245 -.0225 -.0173				
0.000 0.025 0.050 0.100 0.200 0.300 0.400 0.500 0.600 0.700 0.800 0.900 0.950	1.304 1.337 0.010 -.081 -.145 -.092 -.081 -.170 -.169 -.169 -.204 -.230 -.299 -.343	1.312 1.109 -.009 -.086 -.149 -.094 -.078 -.169 -.171 -.206 -.231 -.296 -.339	1.314 1.093 -.008 -.097 -.147 -.088 -.072 -.162 -.165 -.203 -.229 -.292 -.335	1.318 0.071 -.083 -.123 -.160 -.090 -.075 -.161 -.162 -.203 -.232 -.295 -.336	1.322 0.058 -.052 -.135 -.166 -.089 -.072 -.156 -.162 -.197 -.227 -.289 -.331	1.328 0.034 -.102 -.156 -.184 -.110 -.086 -.170 -.164 -.200 -.231 -.290 -.331	1.335 0.021 -.138 -.171 -.192 -.121 -.097 -.178 -.175 -.210 -.239 -.297 -.335	1.343 0.006 -.163 -.193 -.200 -.132 -.103 -.190 -.183 -.219 -.250 -.305 -.341	1.345 0.001 -.177 -.201 -.202 -.134 -.102 -.192 -.186 -.219 -.252 -.308 -.344	1.356 -.016 -.198 -.214 -.208 -.137 -.102 -.193 -.186 -.221 -.252 -.308 -.343	1.359 -.022 -.207 -.223 -.214 -.145 -.107 -.197 -.192 -.224 -.255 -.311 -.346	1.365 -.020 -.204 -.223 -.212 -.143 -.105 -.194 -.189 -.221 -.251 -.307 -.342				
0.075 0.150 0.250 0.350 0.450 0.550 0.650 0.750 0.850 0.925 0.975 a <sub>1</sub> .000	0.058 -.105 -.098 -.139 -.151 -.142 -.166 -.192 -.195 -.270 -.368 -.427 -.385	0.105 -.072 -.066 -.114 -.134 -.126 -.150 -.179 -.185 -.258 -.355 -.425 -.380	0.146 -.038 -.091 -.115 -.106 -.131 -.172 -.244 -.339 -.407 -.381	0.181 -.004 -.011 -.076 -.098 -.090 -.116 -.151 -.161 -.232 -.339 -.380	0.219 -.035 -.013 -.057 -.078 -.072 -.100 -.138 -.147 -.215 -.310 -.383 -.378	0.264 0.077 0.038 -.037 -.063 -.062 -.091 -.128 -.138 -.203 -.296 -.364 -.377	0.297 0.109 0.065 -.021 -.050 -.053 -.083 -.124 -.135 -.197 -.287 -.347 -.372	0.334 0.144 0.095 -.003 -.034 -.042 -.073 -.115 -.128 -.187 -.278 -.345 -.365	0.366 0.174 0.121 0.015 -.018 -.027 -.062 -.104 -.118 -.177 -.267 -.316 -.337	0.407 0.217 0.154 0.040 0.006 -.007 -.044 -.086 -.101 -.159 -.248 -.303 -.329	0.439 0.246 0.179 0.058 0.021 0.005 -.032 -.075 -.092 -.148 -.237 -.287 -.314	0.463 0.271 0.174 0.076 0.038 0.020 -.019 -.061 -.078 -.135 -.224 -.276 -.300				

a1.000 orifice.

NACA

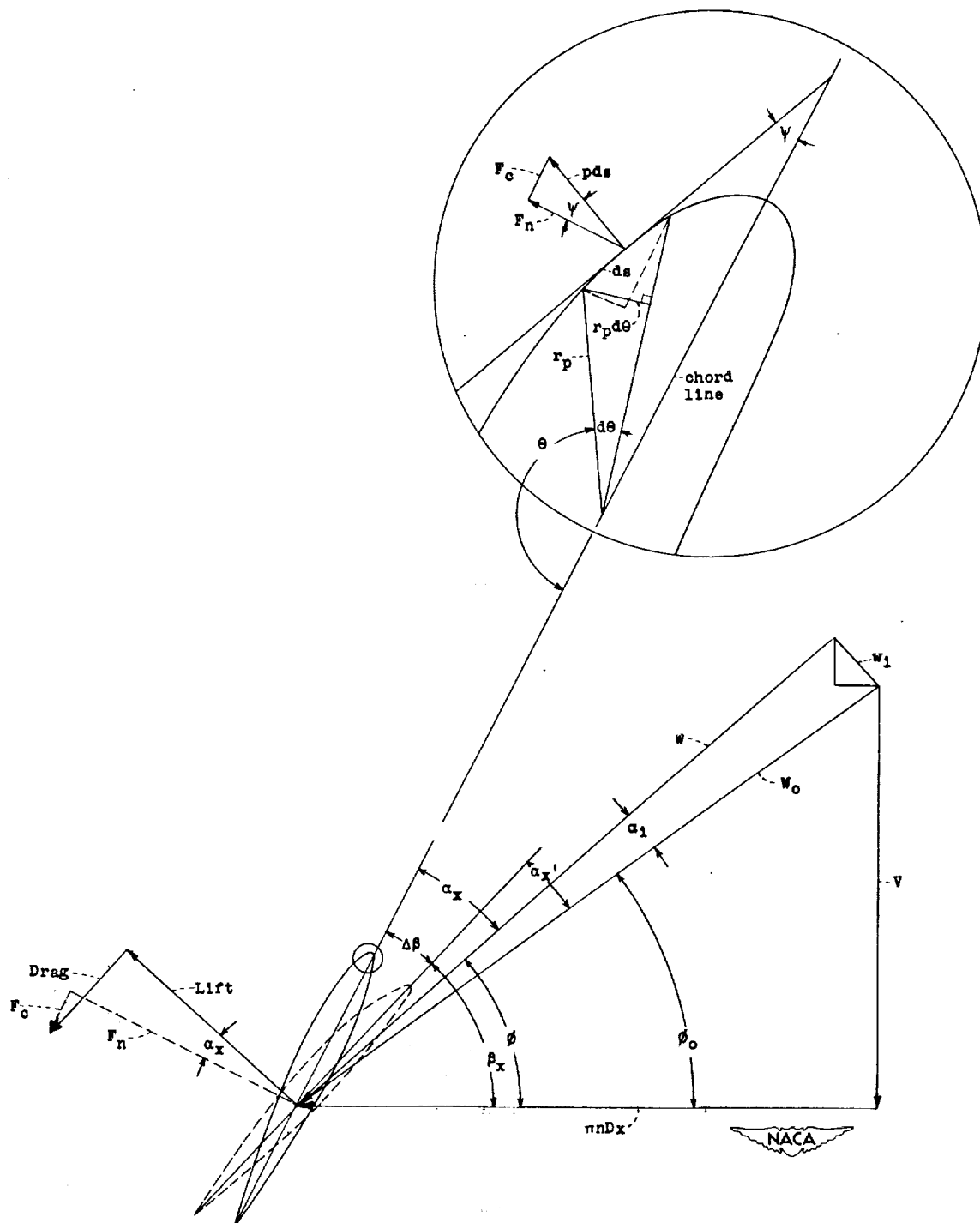


Figure 1.- Vector diagram of the velocities and forces acting on a blade section.

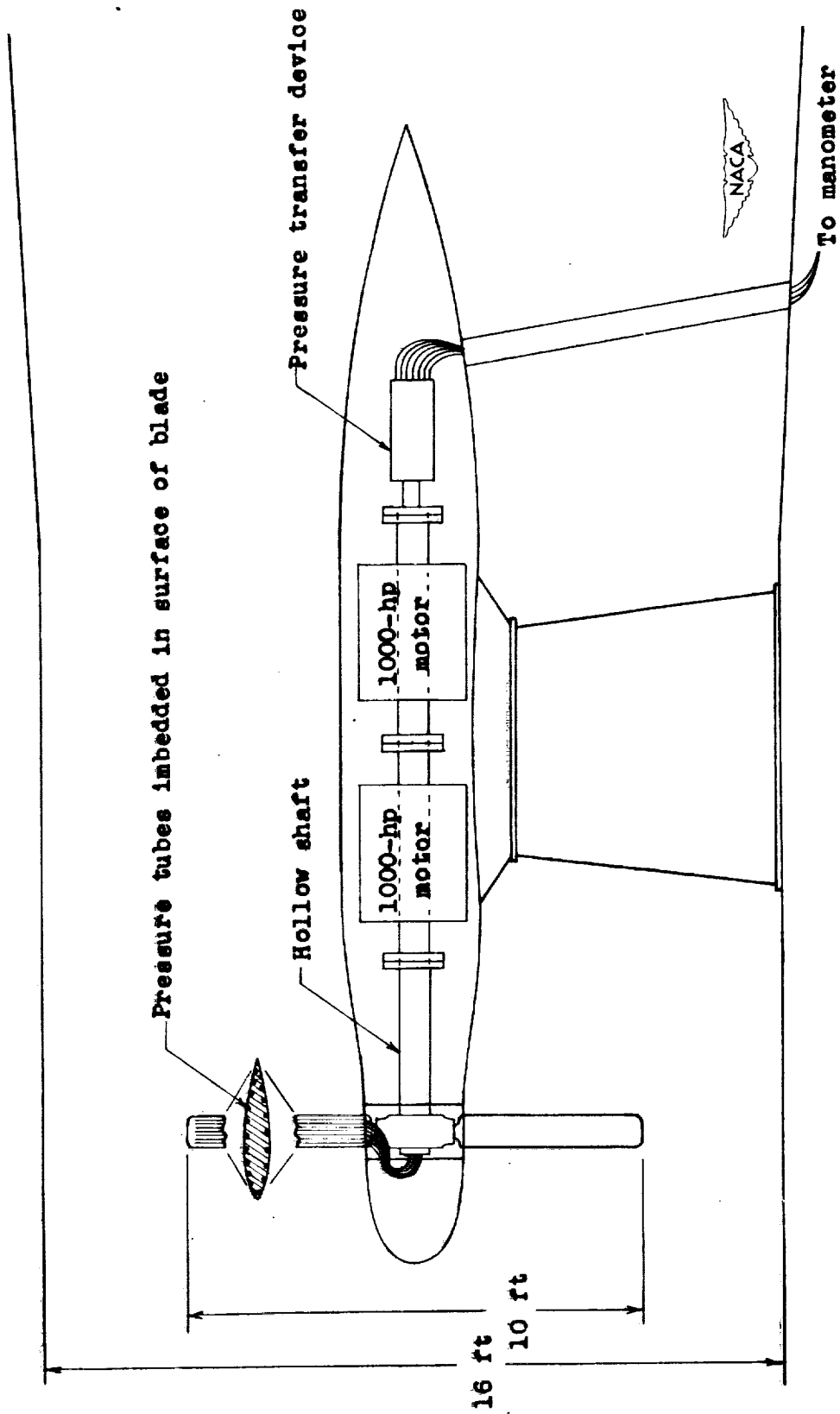


Figure 2.- Diagram of the apparatus used to obtain pressure distributions on the sections of operating propellers.

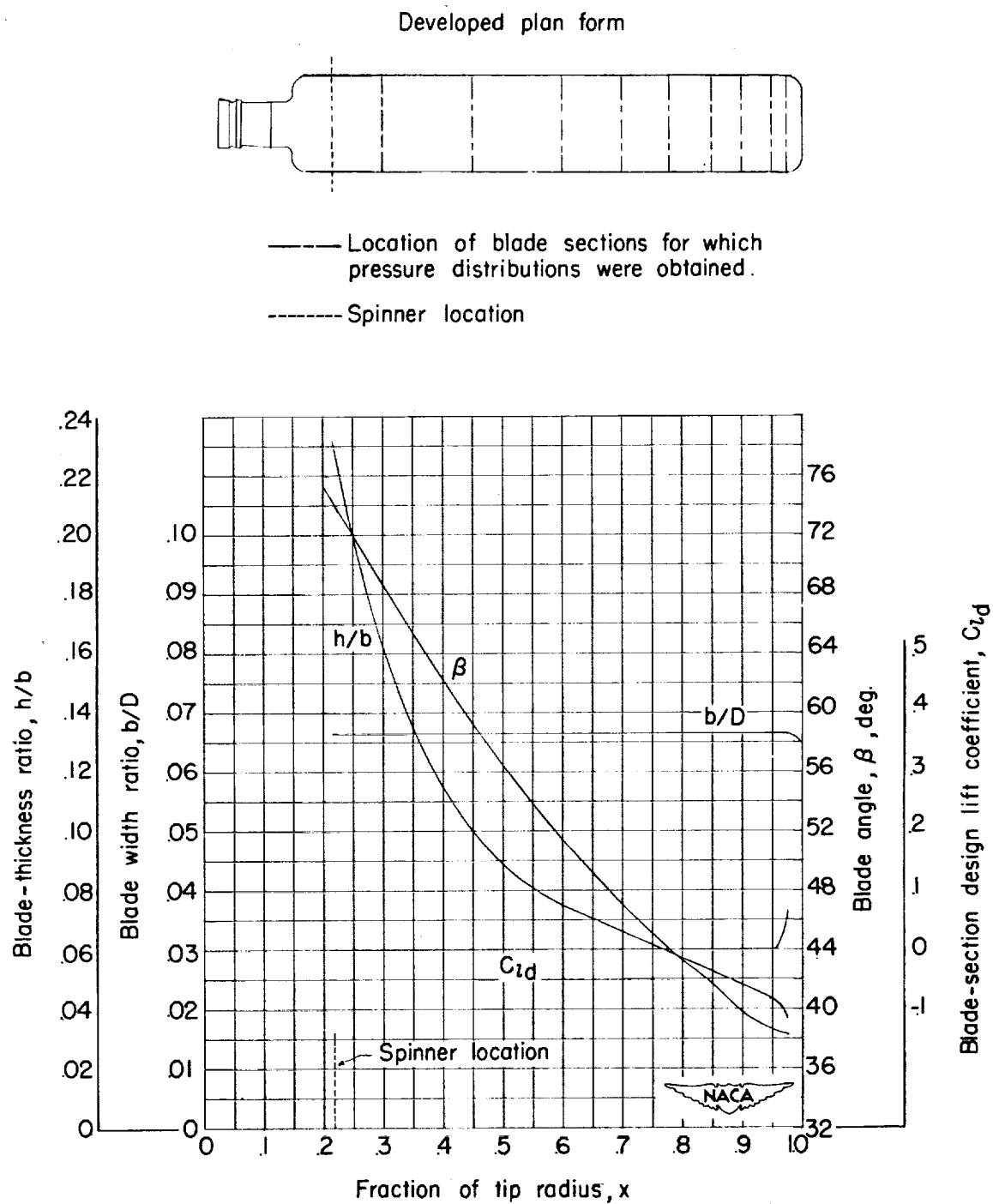


Figure 3.- Blade-form curves for NACA 10-(0)(066)-03 propeller.

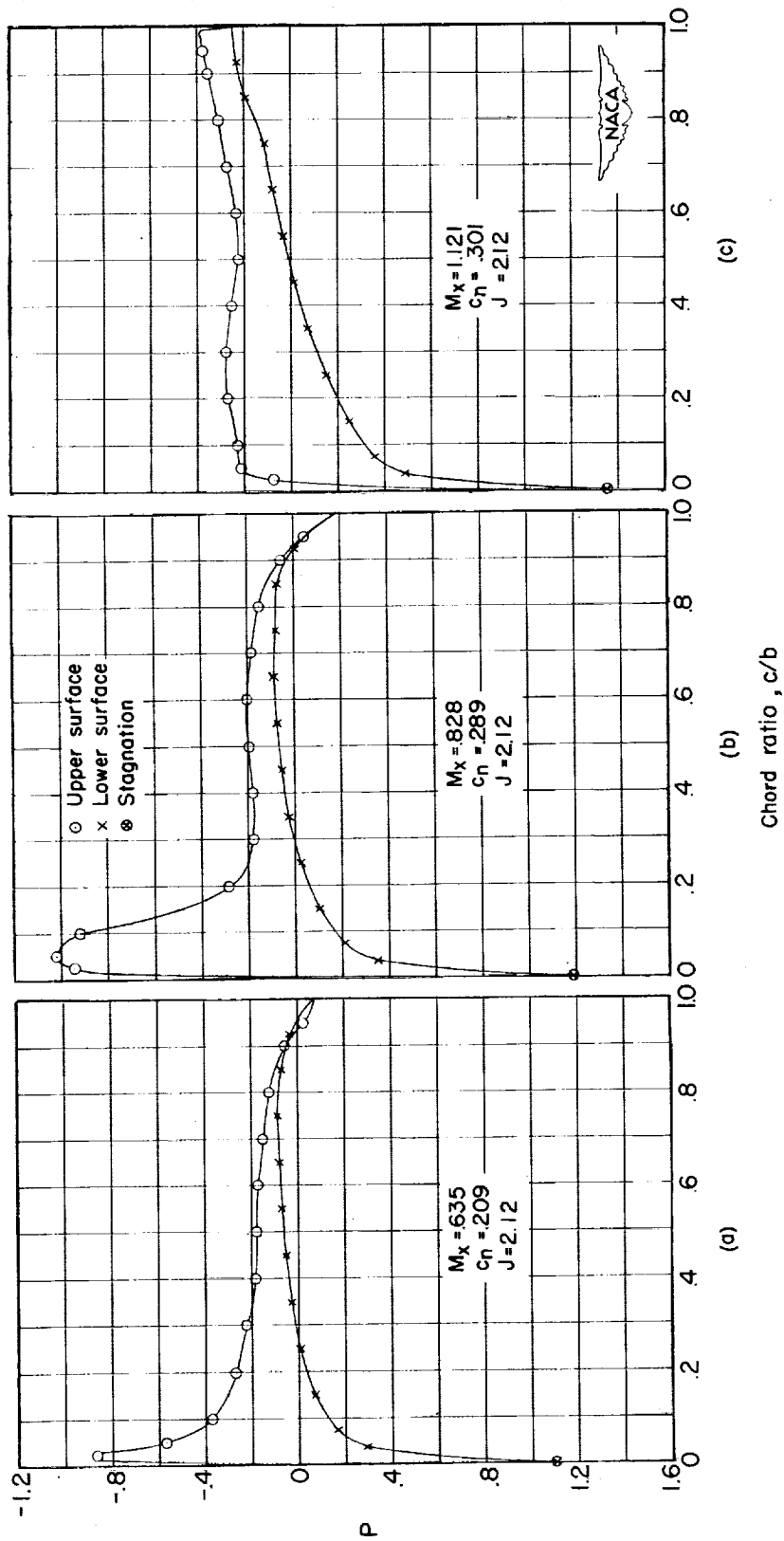


Figure 4.- Variation of pressure coefficient along the chord of  
NACA 16-004.4 propeller blade section located at the 0.95 radius.  
 $\alpha_x = 1.6$  (approx.).



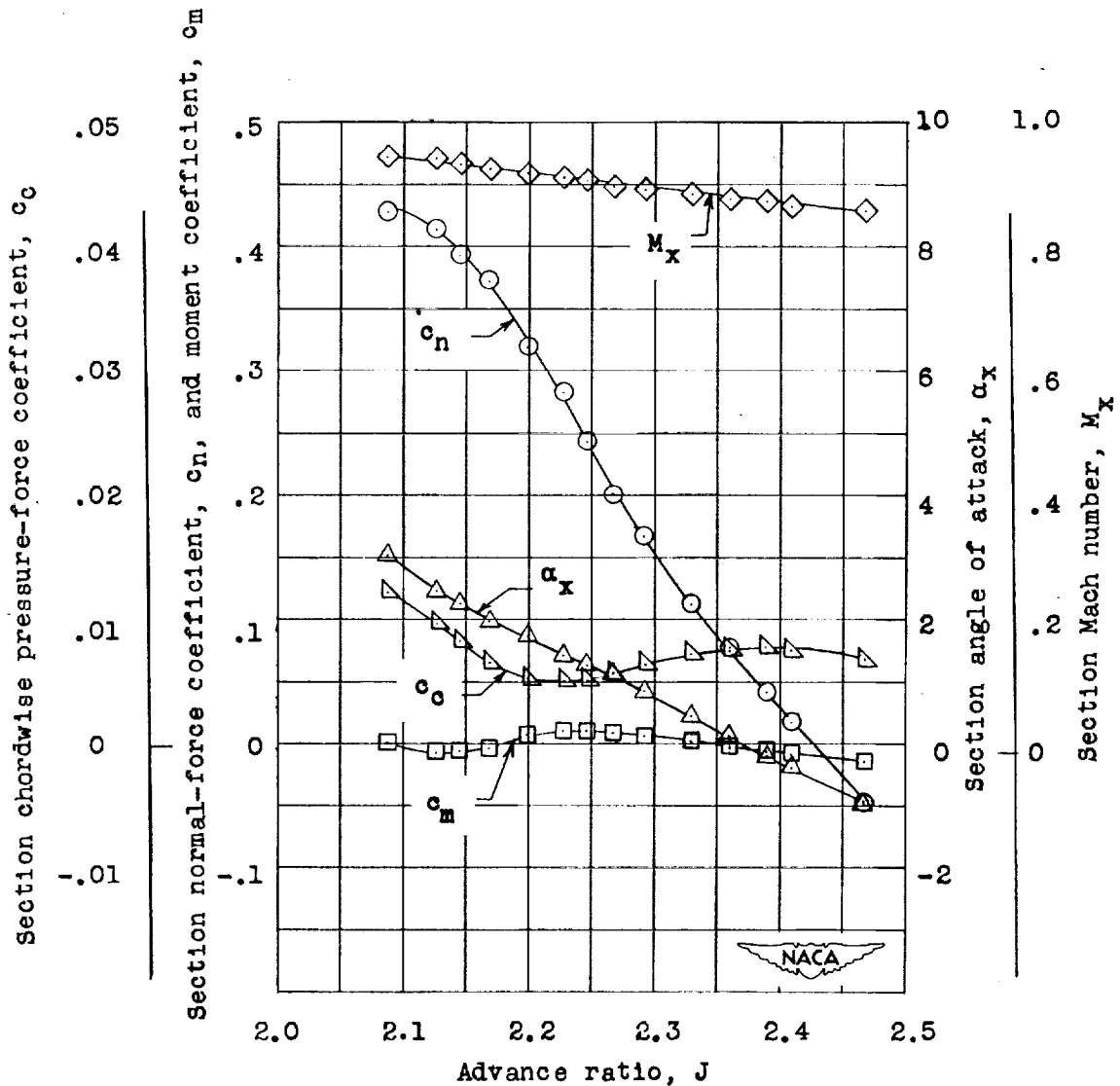


Figure 5.- Variation of section normal-force coefficient, moment coefficient, chordwise-pressure-force coefficient, angle of attack, and Mach number with advance ratio for the blade section at the 0.90 radius, from table 8(e).  $\beta_{0.75R} = 45.2^\circ$ ;  $M = 0.56$ .

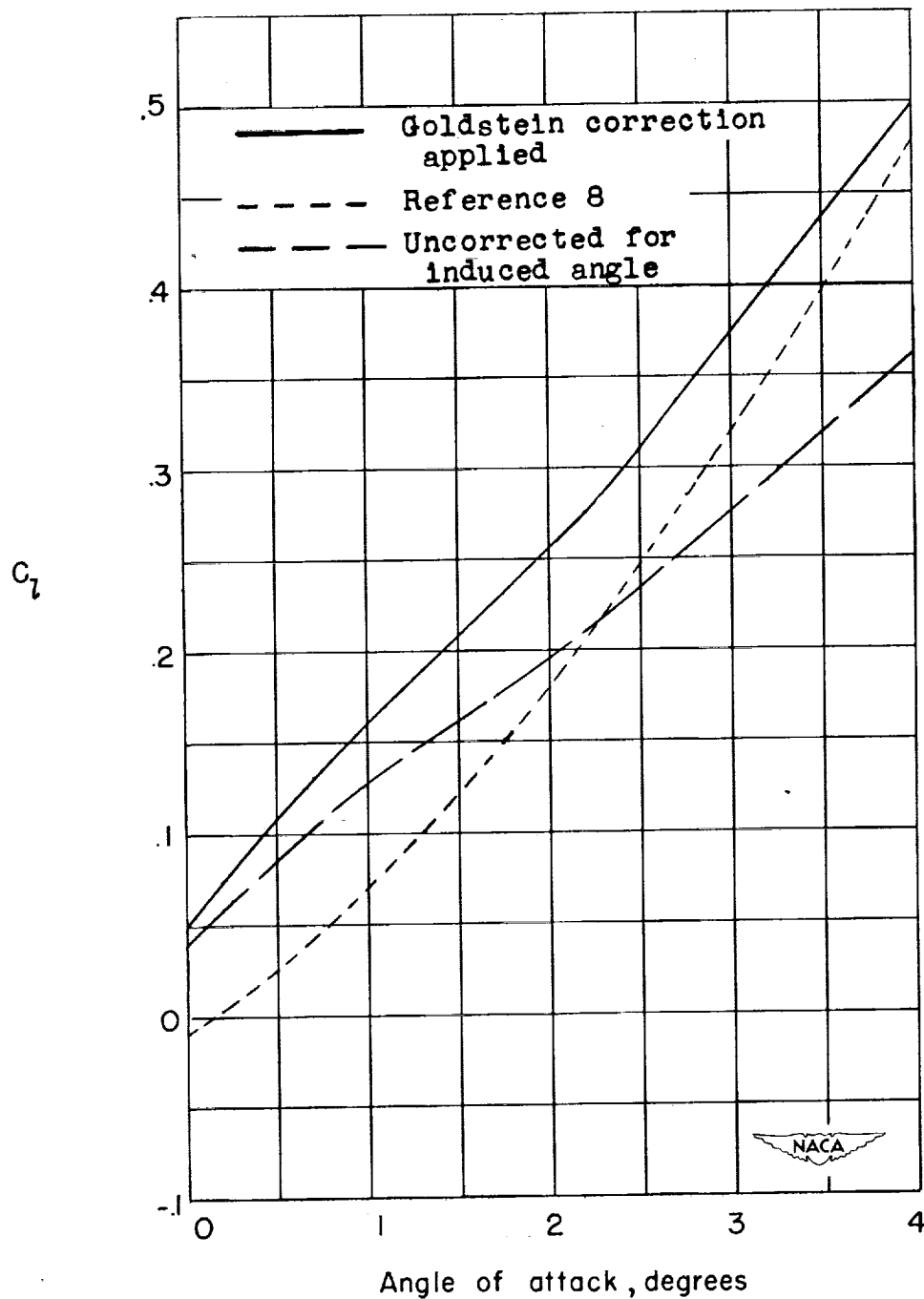


Figure 6.- Effect of induced angle correction on the slope of the normal-force-coefficient curve of NACA 16-005.85 blade section operating at  $x = 0.78$ .  $M_x = 0.7$ .

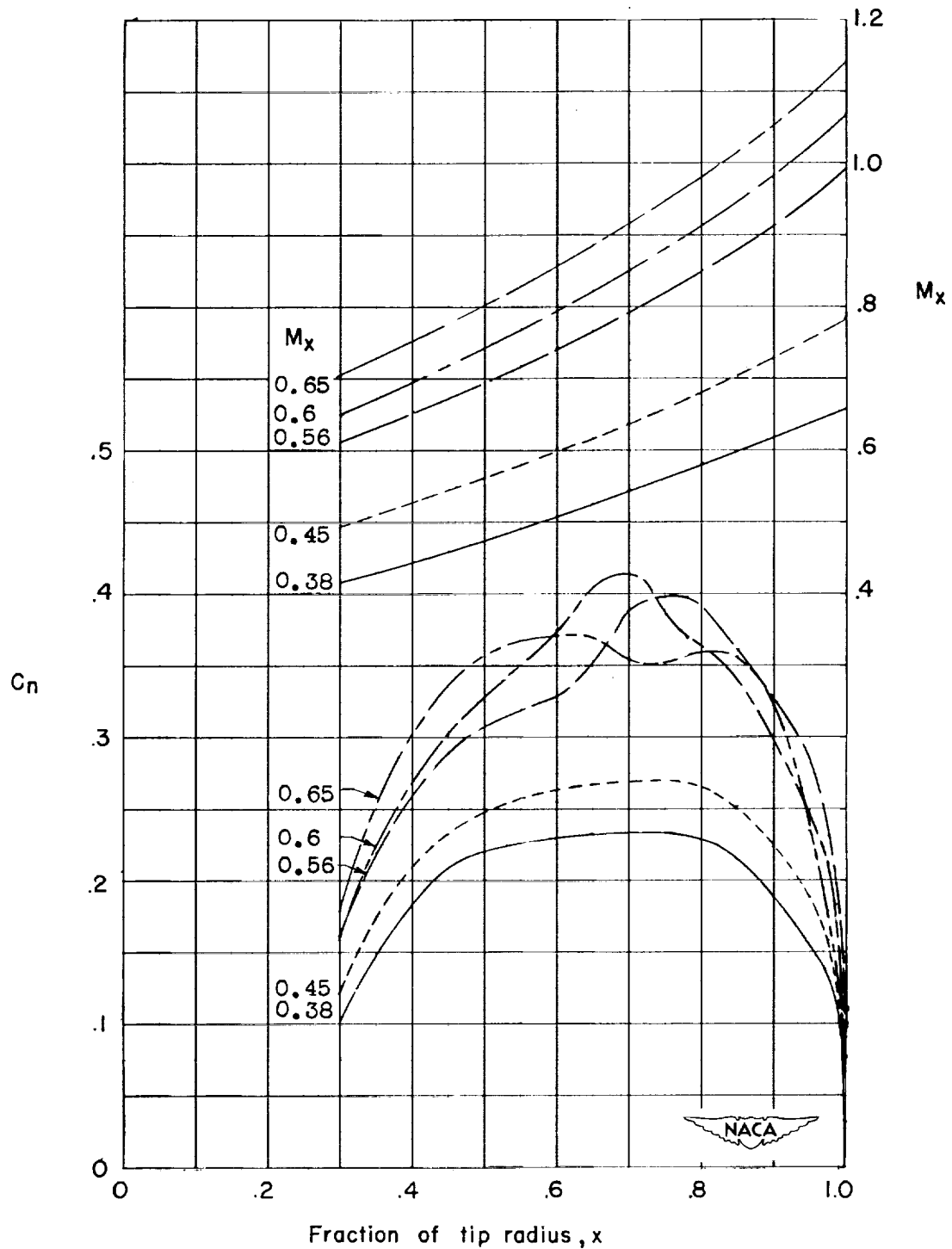


Figure 7.- Variation of the normal-force coefficient and section Mach number along the blade radius.  $\beta_{0.75R} = 45.2^\circ$ ;  $J = 2.2$ .

